



**Healthcare  
Innovation  
Consortium**

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Department of  
**Health**



**HSC** Public Health  
Agency

Research and Development

# Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Discovery Project

April 2024

## Foreword

Welcome to this report produced by the Healthcare Innovation Consortium, shedding light on the current challenges, opportunities, and future potential of research and innovation in Northern Ireland.

This report offers a comprehensive examination of the current research and innovation landscape in Northern Ireland, highlighting key partners and champions essential for driving future progress. It provides insights into the potential of Northern Ireland's healthcare ecosystem, acknowledging the pivotal role of innovation in bridging the gap between healthcare demand and service capacity, as well as learnings from other innovation hub models.

This work is driven by Healthcare Innovation Consortium's comprehensive understanding of the challenges and opportunities within the HSC, including the necessity for an improved mechanism to identify and implement scalable innovations for a more sustainable healthcare system and improved health outcomes. Additionally, there is a concerted effort to bolster the HSCs organisational capability and address ecosystem fragmentation highlighted in the report "Health and Wealth in Northern Ireland: Capitalizing on the Opportunities." To align with the digital, data, and innovation strategies, this project aims to accelerate research and innovation by fostering a culture of collaboration. There is a critical need for enhanced system-wide collaboration to ensure timely access to new medicines, treatments, diagnostics, and health technologies. which contributes to the slow pace of technology adoption and the gap in digital maturity among providers. Collectively, this report should stimulate renewed and refocused discussions around allocation of resource and funding for digital transformation and healthcare innovation.

The insights presented in this report are derived from extensive desk-based research, a comprehensive survey encompassing 88 colleagues from the HSC, academia, industry, and government bodies. This also included structured interviews with 13 key stakeholders across the health ecosystem; workshops involving a diverse array of stakeholders within and around the system; and the collective expertise of our colleagues within Healthcare Innovation Consortium (HIC) who have spearheaded innovation transformation projects elsewhere in the UK.

## Contents

Stakeholder Engagement .....	3
As Is Landscape .....	27
Current Challenges .....	52
Key Steps to Success .....	65
Innovation Models.....	71

## Executive Summary

The Healthcare Innovation Consortium (HIC) embarked on a Discovery Project commissioned by Digital Health and Care Northern Ireland (DHCNI) in collaboration with Public Health Agency Research & Development (PHA R&D) and the Department of Health (DoH). The project aimed to explore the development of a Health & Care Innovation Network tailored to the needs of internal stakeholders in Northern Ireland. Drawing upon extensive research and analysis, the project addressed several key objectives:

**Mapping the As-Is State:** The project assessed the current state of research and innovation maturity, examining existing priorities, needs, and drivers for further innovation and change. An analysis of the existing landscape in supporting and managing research and innovation highlighted opportunities for improvement, including the pooling of resources, and transitioning from siloed operations to an integrated network.

**Exploration of Alternative Models:** Various research and innovation models from elsewhere in the UK were considered, presented, and discussed in workshops. The project sought to determine the necessary approaches, systems, resources, and processes to advance the innovation ecosystem effectively.

**Recommendations for Future Work:** The project highlighted the need for strategic collaboration, robust governance, and a shared commitment to transformative change in order to advance healthcare innovation in Northern Ireland. Recommendations include leveraging existing networks, streamlining workflows, promoting collaboration, and aligning vision and strategy. Moving forward, the design recommendations provide a roadmap for action, focusing on governance structures, innovation pathways, and communication strategies.

This project has engaged the ecosystem across Northern Ireland for the last 4 months; with key stakeholders and organisations across the country are now fully aware of the DHSCs ambitions to improve the innovation landscape. Following some additional research and analysis and system engagement, this work has primed the way to inform the future innovation model for Northern Ireland. The findings serve as a foundation for future phases of discovery, design, and implementation aimed at advancing research and innovation in the region.

The insights in the report underscore the need for a coordinated and strategic approach to research and innovation, supported by robust governance structures and enhanced collaboration across stakeholders. The recommendations put forth aim to drive transformative change, improving system efficiency and population health outcomes, as well as enhancing Northern Ireland's position within the national and international health and innovation community.



# Healthcare Innovation Consortium

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## Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Discovery Phase Stakeholder Engagement

April 2024

## Introduction

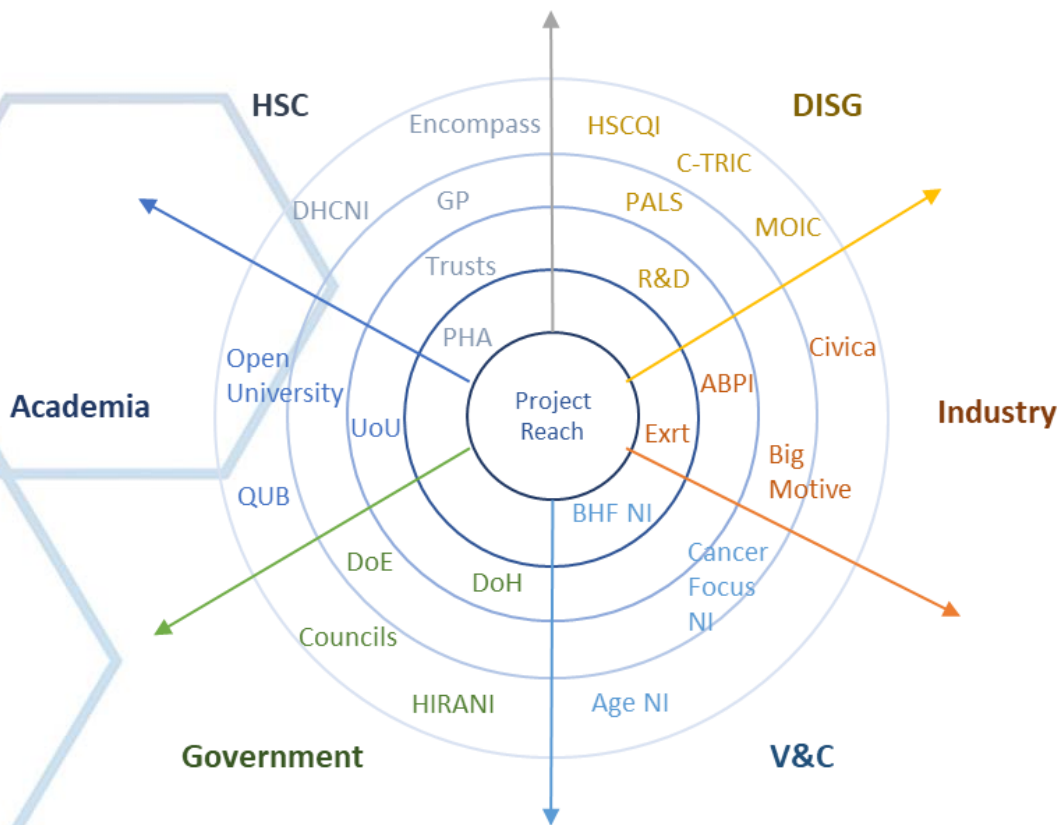
To ensure the report was truly representative of opinions and insights across the region, we involved a wide range of stakeholders, both inside and outside the Department of Health and HSCNI. A key aim of stakeholder engagement was to grasp their diverse perspectives, experiences, and influences on the innovation and research ecosystem; as well as developing strong, lasting connections with current and potential partners for future work. We sought to understand their level of engagement, interest, and ability to support future phases of work and critically, delivery of a new innovation model across Northern Ireland. Within this section, the methods, strategies, and topics covered to create this report will be explained. Through surveys, open discussions and inclusive participation, we aimed to gather valuable insights and shape a shared vision for advancing research and innovation in Northern Ireland.

## Approach to Engagement

A stakeholder engagement strategy was devised and agreed on at the start of the project. The HIC project team formulated a stakeholder template which was populated by the DHCNI project team. Stakeholders were categorised based on their roles and expertise, and engagement methods were tailored accordingly.

At the start of the project, DHCNI reached out to all stakeholders to introduce them to the project and HIC, fostering trust and credibility. From then onward, HIC directly engaged with stakeholders to administer surveys, extend workshop invitations, or schedule one-on-one interviews. Further details regarding the engagement methods are provided below.

Currently, our contact database comprises **265 individuals** encompassing various domains such as clinical, operational, academic, commissioning, entrepreneurial, and policy realms. The diagram below illustrates the stakeholder groups to which some of our contacts are affiliated. A complete summary of stakeholders who actively engaged to form this report can be found in Appendix VI.



## Engagement Methods

To involve our stakeholders effectively, we tailored our approach to match each group's unique value and contribution to the project. We used surveys, interviews, and workshops to gather a range of perspectives and insights crucial for progressing healthcare innovation in Northern Ireland.

### Surveys

Customised online surveys were developed for various stakeholder groups and disseminated to individuals identified as key stakeholders by the core project team. These surveys delved into stakeholders' experiences within the HSC, ongoing innovation collaborations, familiarity with internal and external stakeholder networks, perceived barriers to innovation and collaboration, and resource requirements for future enhancements. The complete set of survey questions for internal and external stakeholders is provided in Appendices I and II, respectively.

### Interviews

A series of one-on-one interviews were conducted to gain an overview of HSCNI's research and innovation capabilities and to glean insights into areas where improved coordination, collaboration, and alignment could enhance effectiveness. These interviews, lasting 30 to 45 minutes, were conducted with key priority stakeholders identified by the core project team. While the interview topics mirrored those of the surveys, they were conducted in a conversational manner, enabling deeper insights tailored to the stakeholder's background, experience, and expertise.

### Workshops

A series of workshops were conducted to evaluate existing successful approaches to research and innovation within the HSCNI ecosystem while addressing identified gaps, barriers, and challenges. The workshops aimed to achieve several key objectives: firstly, to introduce attendees to various research and innovation ecosystem models utilised in systems outside of Northern Ireland, demonstrating their effectiveness in promoting collaboration. Secondly, to explore how these models could be adapted to the Northern Ireland landscape, identifying primary challenges and barriers to collaboration across the wider ecosystem, and proposing strategies to overcome them. Lastly, the workshops provided a platform for key stakeholders to engage in discussions, sharing knowledge, experiences, and insights. Further details regarding the workshop proceedings can be found in Appendix IV.

## Engagement Metrics

In our commitment to inclusive and representative stakeholder engagement, we prioritised gathering input from a diverse array of perspectives within and around the system. The following stakeholder engagement metrics offer valuable insights into the effectiveness of our interactions and the diversity of individuals engaged, contributing to the creation of an impartial report.

It's important to acknowledge that certain individuals may belong to multiple stakeholder groups. For instance, there are individuals who work within the system but also have ties to academia, or clinicians who also engage in entrepreneurial activities.



## Appendix I - Internal Survey

### Introduction

Healthcare Innovation Consortium (HIC) are undertaking a piece of discovery work, engaging key stakeholders to understand the full extent of research and innovation across the Northern Ireland Health and Care health and life sciences ecosystem, and opportunities to enhance its growth and development. Digital Health and Care Northern Ireland (DHCNI), HSC Research & Development, and the Department of Health NI are uniting to focus on the possible creation of a collaborative innovation ecosystem. This is a collaborative network of individuals, entities, resources, and structures that join up to support and enable research and innovation development, evaluation, adoption, and scale-up of new products, ideas, methods, and systems. The discovery work will provide an understanding of the activities that are taking place, and resources that are available to inform the effective implementation of a collaborative innovation ecosystem and underpinning infrastructure.

The aim of this questionnaire is to capture an overview of HSC's capability in relation to research and innovation, and to provide insight into areas where we can better co-ordinate, collaborate and align our activities through more effective working.

Thank you in advance for participating in our survey. Your feedback is important. Having a greater understanding of the whole collaborative innovation ecosystem within HSC will support the system to deliver the best services for our population and staff. It will provide consistency, clarity and focus for communication and engagement between internal and with external stakeholders by any part of the HSC ecosystem. This will support us to attract external support and investment to develop our health and economic growth agenda.

Analysis of survey, interview and workshop results will assist with streamlining and filling gaps in the ecosystem, reducing silo working, ensuring effective decision making, supporting action planning, and increasing focus on mandated research and innovation programmes that meet the needs of the Northern Ireland population.

The survey will take approximately 15-20 minutes to complete. You can pause and return to where you left the questionnaire at any time by returning to this link.

Please be reassured that survey results are being collected and reported in accordance with the Market Research Society Code of Conduct. Data collected as part of this survey will be compiled to produce an overall view of the survey results and your individual responses will be kept anonymous. Giving your name means we can contact you to follow up any points or questions that you raised in the survey, but this discussion will not be attributed to you.

### About you

1. What is your name? Please write your response below.
2. What is your email address? Please write your response below.
3. What is your role?
4. What HSC internal stakeholder organisation(s) do you belong to?
5. What is your remit in relation to research and innovation?

### Working outside of HSCNI

6. Do you work with innovators who are primarily external to the HSCNI e.g., companies Yes/No

If **No** skip to question 7. If **Yes** please answer the following questions:

- i. Describe your primary objectives and core activities.
- ii. Describe briefly the outcomes from these activities (successful and non-successful)
- iii. What are the most common routes for leads and opportunities to present themselves to you?
- iv. Are you proactive in generating new leads and opportunities? If yes
  - a. What works well?
  - b. What doesn't work so well?

### Working collaboratively within Health

7. Do you/ have you engaged, collaborated and communicated with HSC colleagues to achieve improved outcomes?  
Yes/No
8. What works well when you do this?
9. What could be improved to facilitate better outcomes from research and innovation for the HSC and patients?
10. Do you/have you engaged with external stakeholders to achieve research and innovation outcomes? Yes/No
11. What worked well?
12. What could be improved to facilitate better outcomes from research and innovation for the HSC and patients?

### About your clients/ Innovators that you work with

13. Who do you consider to be your clients in relation to research and innovation? i.e. internal or external to health?
14. What research and innovation do you connect with, please list this below.
15. What stage is the research and innovation usually at when they connect with you?
16. Do you commonly signpost innovators to other parts of the system?
17. Is this internally or externally?
18. What is your knowledge of the following internal stakeholder groups regarding their role in research and innovation?

*C-TRIC, MOIC, HSC Industry Engagement, PaLS, Quality Improvement, HSC Innovations, DHCNI, HSC R&D Division, NICRN*  
(Likert scale below)

Never heard of; heard of, some knowledge, worked with, work regularly with them; signpost to

19. Would you be in favour of a united brand to communicate and receive research and innovation opportunities?
20. What are the challenges with connecting/ collaborating locally nationally and internationally?

### Effectiveness

Thinking about the current working practices and processes regarding research and innovation.

21. What is working effectively in the ecosystem? – Rate each comment from 1-6 Statements (Codes: 1 Strongly disagree, 2 Disagree, 3 Neither, 4 Agree, 5 Strongly agree, 6 Don't know)
  - Our research and innovation priorities are determined by the priority needs of our population.
  - Our research and innovation priorities are clear.
  - We collaborate well.
  - Our interactions are effective in supporting each other to achieve our innovation priorities.
  - Our current research and innovation meetings add value in supporting us to achieve our research and innovation priorities.
  - We are innovative and willing to discuss and commission new technologies, products, and services.
  - We learn from each other and share information.
  - We give supportive challenge to each other in research and innovation meetings.
  - We make decisions in these meetings.
  - We understand how parts of the ecosystem interact and how innovations get scaled.
    - Other (please specify).

### Barriers to Innovations

What do you believe are the biggest barriers to implementing and adopting innovative products, services and ways of working across the NI system? Choose a response, from the codes, to match with the following statements. Statements (Codes: 1 Strongly disagree, 2 Disagree, 3 Neither, 4 Agree, 5 Strongly agree, 6 Don't know)

22. Possible barriers to implementing innovation, products and services across the NI system
  - The resources to deliver the policy priorities are not clearly identified
  - Incentives and funding for adoption and scale do not align.



- Governance structures are not in place to ensure barriers are recognised and removed.
- There is a perception that the new products and services will not improve operational delivery and therefore they are not implemented into practice.
- When we make decisions about supporting an innovation it's not clear how we are going to implement adoption and scale.
- The perceived risk of new ways of working means staff do not adopt innovations we would like to scale.
- Commercial incentives are not in place for suppliers to proactively work with us
- There is a lack of evaluation to show safety, efficacy and cost-effectiveness of innovative products or services.
- There is an absence of health technology appraisal guidance to support implementation.
- Other (please specify)

### **Involvement in Programmes and Initiatives**

23. Please list any research and innovation related programmes or memberships of relevant networks & stakeholder groups (local & national) you are involved with.
24. Do you feel there is duplication among these groups. Yes/ No.
25. If Yes, then where? Please specify below.
26. How could we work together to enable more effective communication and engagement with the wider ecosystem to explore synergies and improvements?

### **Innovation**

27. Please detail innovations that have been implemented within your organisation within the last 3 years – Write your response below.
28. Which of these innovations should be scaled and adopted across Northern Ireland?
29. What would it take to enable roll out? Please write your response below.

### **Digital**

Our Innovation Strategy talks about the creation of a Digital Hub. It describes this hub as being the centre of excellence for scoping, prioritising, piloting and scaling innovation in digital health products, services and processes.

30. Thinking about the role of digital in our innovation ecosystem. Do you view the role of digital as (select all that apply)
  - Supporting the digital and technical aspects of innovation
  - “Horizon scanning” on potential emerging digital technologies that can support improved population health, workflow, diagnostics etc
  - Facilitating collaboration on digital innovative projects between partners in the innovation eco-system
  - Implementing digital innovation that can improve workflow, diagnostics and health
  - Providing data and evidence to support the prioritisation of innovation
  - Facilitating the embedding and adoption of digital innovations at scale
  - Others (please specify)
31. Do you believe the system has the resources to support the roles that you believe digital should play in the collaborative innovation ecosystem Yes/No
32. What other resources do you feel is needed to support the digital aspects of the eco-system?
33. Do you have resources that you could contribute to the digital aspects of the ecosystem? If yes please list them below;

## Appendix II - External Survey

### Introduction

Healthcare Innovation Consortium (HIC) are undertaking a piece of discovery work, engaging key stakeholders to understand the full extent of research and innovation across the Northern Ireland Health and Care health and life sciences ecosystem, and opportunities to enhance its growth and development. Digital Health and Care Northern Ireland (DHCNI), HSC Research & Development, and the Department of Health NI are uniting to focus on the possible creation of a collaborative innovation ecosystem. This is a collaborative network of individuals, entities, resources, and structures that join up to support and enable research and innovation development, evaluation, adoption, and scale-up of new products, ideas, methods, and systems. The discovery work will provide an understanding of the activities that are taking place, and resources that are available to inform the effective implementation of a collaborative innovation ecosystem and underpinning infrastructure.

The aim of this questionnaire is to capture an overview of Northern Ireland's Health and Care health and life sciences capability in relation to research and innovation, and to provide insight into areas where we can better co-ordinate, collaborate and align our activities through more effective working.

Thank you in advance for participating in our survey. Your feedback is important. The survey will take approximately 15-20 minutes to complete. While it is designed to gather information from a diverse array of roles and responsibilities, we understand that certain sections may not directly align with your specific role. You are encouraged to navigate through the survey at your own discretion, and should you encounter sections that may not be applicable to your responsibilities, please feel free to skip them.

### About you

1. What is your name?
2. What is your email address?
3. What organisation(s) do you belong to?
4. What is your role?
5. Where is your organisation based in? (tick box)
  - Northern Ireland
  - Republic of Ireland
  - Scotland
  - England
  - Wales
  - Other (please specify)

### Effectiveness

6. Thinking about the current working practices and processes regarding research and innovation, what is working effectively in the NI Health and Care ecosystem?

### Barriers

7. What do you believe are the biggest barriers to implementing and adopting innovative products, services and ways of working across the NI Health and Care ecosystem?
8. Have you worked with any other health innovation ecosystems outside of Northern Ireland? If yes, What worked well when you have done this?

### Healthcare Research and Innovation – Your experience to date

9. What is your product(s) or service(s) in relation to health and/or social care?
10. Have you previously engaged with HSCNI your innovative products or services? **Yes/no**

If **yes**, What was the outcome?

- Successful
  - Unsuccessful
  - In progress
  - Please explain the reason of the outcome (free text)
- 11.** To ensure research and innovation programmes meet HSC needs, are you clear on what the HSC priorities are?
- 12.** We are in the process of improving our engagement with industry, academia, and public bodies, and are open to discussion and learning from all stakeholders. Which areas of research and innovation do you believe we could collaborate on? (click all that apply)
- Access to data
  - Access to clinical materials
  - Collaboration with clinical researchers
  - Evaluation of fit with HSC Care Pathways
  - Clinical evaluation/ study
  - End user acceptability
  - Health Care Professional expertise
  - Clinical trials e.g., RCT
  - Clinical investigation e.g., for medical devices/ diagnostics
  - Regulatory approvals for medical devices/ diagnostics
  - Healthcare economic analysis
  - Technical/ Safety testing
  - Product development
  - Understanding funding channels
  - Commercial support and advice
  - Scaling up and adoption
  - Procurement
  - Other information or advice right now: describe

### Involvement in Programmes and Initiatives

**13.** What is your knowledge of the following HSCNI centres and initiatives?

**Never heard of; heard of, some knowledge, worked with, work regularly with them; signpost to**

- Medicines Optimisation Innovation Center (MOIC)
- Clinical Translational Research and Innovation Centre (C-TRIC)
- Health and Social Care Quality Improvement (HSCQI)
- HSC Industry Engagement
- Patient Advice and Liaison Service (PaLS)
- Impact Research Centre
- Digital Health & Care NI (DHCNI)
- HSC Innovations
- NI Biobank

**14.** What is your knowledge of the following funding or support programmes and initiatives?

**Never heard of; heard of, some knowledge, worked with, work regularly with them; signpost to**

- i4i
- Invest NI Innovation vouchers
- IDAP Pilot
- Catapult
- Launchpad

- Techstart
  - Other UKRI/Innovate UK funds
  - ESPRC
15. In what ways could HSCNI improve the health research and innovation ecosystem?
  16. How would you prefer to connect with the HSC? (Free text)
  17. Please list any research and innovation related programmes or memberships of relevant networks & stakeholder groups (local & national) you are involved with.
  18. Do you feel there is overlap among these groups or programmes? **Yes/ No.**
    - a. If **Yes**, then where, and how could this be avoided?
  19. Would you be in favour of a united network / unified portal to communicate and receive research and innovation opportunities?
  20. Do you believe the system has the resources to support the roles that you believe digital and research should play in the collaborative innovation ecosystem **Yes/No**
  21. What other resources do you feel are needed to support the research, innovation, and digital aspects of the ecosystem?
  22. Do you have resources that you could contribute to the research, innovation, and digital aspects of the ecosystem? If yes please list them below;

## Appendix III - Interview Brief & Outline

### Introduction

Healthcare Innovation Consortium (HIC) are undertaking a piece of discovery work, engaging key stakeholders to understand the full extent of research and innovation across the Northern Ireland Health and Care health and life sciences ecosystem, and opportunities to enhance its growth and development. Digital Health and Care Northern Ireland (DHCNI), HSC Research & Development, and the Department of Health are uniting to focus on the possible creation of a collaborative innovation ecosystem. This is a collaborative network of individuals, entities, resources, and structures that join up to support and enable research and innovation development, evaluation, adoption, and scale-up of new products, ideas, methods, and systems. The discovery work will provide an understanding of the activities that are taking place, and resources that are available to inform the effective implementation of a collaborative innovation ecosystem and underpinning infrastructure.

The aim of this interview is to capture an overview of HSC's capability in relation to research and innovation, and to provide insight into areas where we can better co-ordinate, collaborate and align our activities through more effective working.

Thank you in advance for participating in our interview. Your feedback is important. Having a greater understanding of the whole collaborative innovation ecosystem within HSC will support the system to deliver the best services for our population and staff. It will provide consistency, clarity and focus for communication and engagement between internal and with external stakeholders by any part of the HSC ecosystem. This will support us to attract external support and investment to develop our health and economic growth agenda.

Analysis of the interview responses will assist with streamlining and filling gaps in the ecosystem, reducing silo working, ensuring effective decision making, supporting action planning, and increasing focus on mandated research and innovation programmes that meet the needs of the Northern Ireland population.

### Your role in research and innovation

1. How does your role contribute to the delivery of research and innovation (including digital innovation) across HSC?
2. What innovations are you aware of that are currently being developed and rolled out across the NI L&HS ecosystem?
3. What are the current barriers and challenges to achieving implementation and rollout of innovation within the NI L&HS ecosystem?

### Working together within the HSC

4. Are you clear about the priority needs in HSC so that we can ensure research and innovation programmes meet these needs?
5. What research/ innovation/ digital meetings or groups are you part of, if any?
6. Could they be more effective in ensuring you make a positive impact? If so, how?
7. What is your knowledge of the following internal stakeholder groups with regard to their role in research and innovation? (C-TRIC, MOIC, HSC Industry Engagement, PaLS, Quality Improvement, HSC Innovations, DHCNI, HSC R&D Division, NICRN)
  - *Never heard of; heard of, some knowledge, worked with, work regularly with them; signpost to (interviewer to tick off those the interviewees recognise)*
8. If you know about these organisations, do you notice any duplication or possible synergies?
9. Would you be in favour of a united HSC ecosystem approach to communicate and receive research and innovation opportunities? If yes,
  - What activities should be included in a system-wide innovation ecosystem? (prompt about digital if this isn't mentioned)

- What barriers might prevent HSCNI from collaborating and implementing innovation locally, nationally and internationally collectively?
10. Any other comments?

## Appendix IV - Workshop Outline

### Purpose of the Workshop:

Digital Health and Care Northern Ireland (DHCNI), HSC Research & Development, and the Department of Health NI are uniting to focus on the creation of a collaborative research and innovation ecosystem.

Healthcare Innovation Consortium (HIC) are working with the three bodies to look at how this ecosystem might work in practice and what arrangements need to be put in place to establish and sustain an ecosystem, that makes a positive impact on population health and the economy of the region.

The focus of this workshop will be to identify the existing successful approaches to research and innovation within the HSC ecosystem, as well as addressing gaps, barriers and challenges, enhancing collaboration, suggesting governance of the new ecosystem and fostering a culture of collaboration.

### Key Objectives:

- Present stakeholders with a number of research and innovation ecosystem models, and how they are harnessed to increase collaboration in research and innovation in systems outside of NI
- Explore how similar models might be adapted to the NI landscape, and identify the main challenges and barriers towards collaboration across the wider ecosystem, along with suggested ways to overcome these challenges.
- Give the opportunity for key stakeholders to discuss and to share knowledge, experience and insight.
- Explore the common themes throughout different departments, organisations and job roles.

### Agenda:

#### 1. Welcome and Introductions (10 mins)

Introductions from LM and SAH, detailing their background and experience

Introductions from everyone and a brief description of their role in the research and innovation ecosystem – LM

#### 2. Feedback of key themes from survey and interview responses (10 mins)

Presentation by HIC – BH

#### 3. Presentation of research & innovation ecosystem models (20 mins)

Presentation by HIC – LM and SAH

#### 4. Breakout Sessions: Interactive Group Activity 1 (25 mins)

You've seen a number of healthcare Research and Innovation ecosystems presented - Now imagine that your system is working collaboratively to roll out research and innovation that meets population needs.

Potential prompts:

- What factors currently work – and you just need to encourage and reinforce them?
- What weaknesses are hindering this ambition or are misaligned?
- Which are the most important factors that need to change?

#### Feedback from the groups (15 mins)

#### 5. Breakout Sessions: Interactive Group Activity 2 (15 mins)

- From what you have heard from the presentation – how could your system display collaborative behaviours around the research and innovation agenda?
- What governance will support positive collaboration around the research and innovation agenda?

#### Feedback from the groups (10 mins)

#### 6. Questions, Next Steps, Closing Remarks (5 minutes)

## Appendix V – Workshop Presentation

# Building a Research and Innovation Ecosystem

*Achieving Success by learning from what  
works well*

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February 2024



## Feedback on survey and interview responses

### Barriers to adoption & rollout

- **Uncertainty** regarding the clarity of priority needs within HSC
- The **resources** to deliver the policy priorities are **not clearly identified**
- **Incentives and funding for adoption and scale do not align**
- **Governance structures** are not in place to ensure barriers are recognised and removed
- *“When we make decisions about supporting an innovation it’s **not clear how we are going to implement adoption and scale**”*

### Barriers to connecting & collaborating

- Ambiguity around the term **“innovation”**
- **Lack of cohesion towards the common goals**
- **Lack of funding** (or perhaps lack of effective and recurrent funding)
- Siloed approach
- Lack of a collaborative internal approach
- Lack of top-down direction
- Complex networks
- *“Different jurisdictions, different cultures, varying needs”*
- *“Too many small groups with their own agendas”*

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## Feedback on survey and interview responses

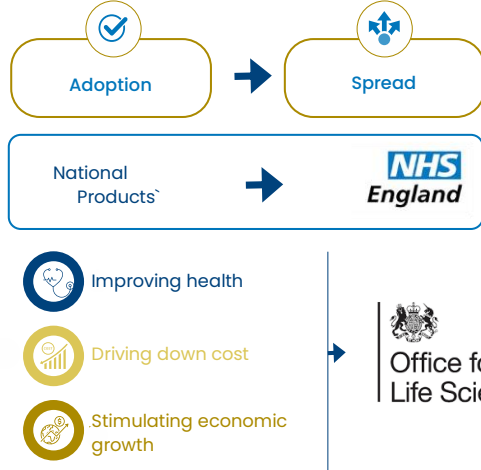
### Working together – what is needed

- 95% in favour of a **united brand** to communicate and receive research and innovation opportunities
- A better understanding of work being undertaken or planned to **identify synergies** and facilitate consortia creation
- More **interaction** between stakeholder groups
  - Single point of contact
  - Newsletters
  - Forums
  - More information sharing
  - a collective who have the sole responsibility of identifying, analyzing and communicating good practice across the system
- **Dedicated champion roles/experts on digital** and interoperability to help **improve benefit realisation**
- **Foster a clearer, more defined structure** with regards to the introduction and adoption of innovation
- **Levels of funding, consistency of funding, access to funding and management of funds need to be analysed** and scrutinised

### Factors to support research and innovation rollout

- ▶ Evidence base of improved health outcomes and reduced health inequalities
- ▶ Evidence of increased value to the health and care system for every £ spent
- ▶ Evidence that the it meets a need and works in practice
- ▶ Networks and collaborations which will increase the spread of value adding innovation

# The Health Innovation Network (HIN)



## HINs connect NHS leaders and industry partners to drive cost effective growth through innovative solutions

### What is a Health Innovation Network (HIN)?

- Established in 2013, the Health Innovation Network (HIN), previously known as The AHSN Network, consists of 15 local groups leading the charge in health and care innovation, each AHSN had a population size of 4 -6 million residents
- They formed a national Network, which negotiates with government for funding, national innovation rollout and shared innovation schemes e.g. NIA scheme
- As connectors of the NHS, academia, local authorities, the third sector, and industry, HINs are uniquely positioned to rapidly and broadly scale innovation.
- HINs collaborate with HIN members, national commissioners (NHS England & Improvement, Office for Life Sciences) , and industry partners, HINs ensure that patients regularly benefit from innovative solutions

References: 1. NHS. NHS Long Term Plan. Available at: <https://www.england.nhs.uk/long-term-plan/>

### HINs operate with three core aims:

- 1 Improve outcomes for patients
- 2 Drive down costs
- 3 Stimulate economic growth

### HINs achieve this by seeking innovations that

- Enhance patient care, safety, and clinical outcomes
- Generate cost savings for the NHS and social care
- Align with the NHS's priorities <sup>1</sup>

## Innovation Pathway – a structure for local innovation



## HINs have a dual focus, guiding both commercial innovators and NHS healthcare teams through various supportive methods

### How do HINs guide commercial innovators?



Advice

#### Innovation Surgeries

Offering one-on-one advice, either in-person or via phone, to help innovators identify healthcare challenges and understand evidence requirements.



Support

#### Solution Evaluation

Assessing if your innovation addresses the needs of HIN members and promoting it within the network.



Programmes

#### Funding and Support Navigation

Directing innovators to additional resources like the National Innovation Accelerator.



Connections

#### Business Support and Networking

Providing access to programs like the Digital.London Health Accelerator, expert workshops, and funding opportunities such as SRBI and Innovate UK competitions.

### How do HINs guide health and care teams?

#### Innovative products

Signposting to innovations that may meet the needs of their local populations. Advise on design and implementation of digital pathways.

#### Practical Support

Evaluations, evidence gathering and data analysis to build knowledge and support clinical practice. Training in key areas (Digital, Data, Technology). Frameworks for adoption.

#### Innovation Programmes

Facilitate adoption of proven innovation products through AAC. Annual Innovation Grants kickstart projects. Sharing of wider innovation funding opportunities.

#### Connecting people with great ideas

Communities of Practice (CoP). Innovation challenge events. Patient partnerships. Events and networking opportunities.

## Adoption and spread of innovation in the English NHS

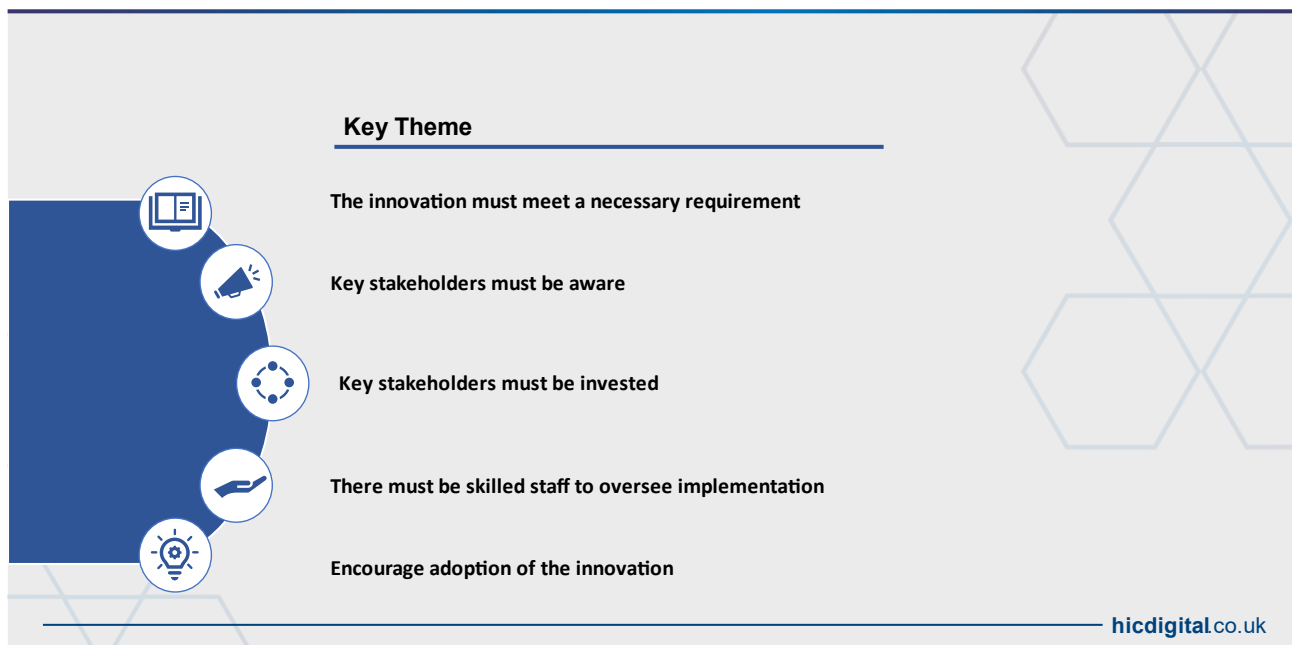
### Key lessons 1

- Simple, evaluated, low-cost innovations can make a dramatic difference to people's lives
- Changes to roles of GPs, community services, hospital consultants is key
- Work needs to be conducted through existing forums
- Empowering patients/ service users to plan a more active role in administering their own care moves innovation forward
- Even simple, well-designed innovations are complex to transfer from one place to another
- Faster progress is made where commissioners delegate responsibility for improving services to providers

### Key lessons 2

- Attitude of local leaders and working environment have a significant impact on the speed of innovation and spread
- Some leaders prefer to focus on the day job and see innovation and change as an unaffordable luxury
- Adoption can depend on interpersonal influence through networks and credible colleagues influencing their own professional groups
- Geographic and service silos means that learning across areas is not easy – joined up commissioning systems can help with this.
- Innovation teams have important roles in connecting organisations that are likely to benefit from innovations

## There are 5 pillars for Health Innovation Network success



## A Blueprint for Success

Theme	Base Case	How to Level Up?
<b>Collating the Evidence Base</b>	<ul style="list-style-type: none"> <li>Review the evidence base, strategic and policy needs, and local, regional, or national data to outline the case for change.</li> <li>Address health inequalities and ensure protected groups are not unintentionally disadvantaged.</li> </ul>	<ul style="list-style-type: none"> <li>Stay at the forefront of UK Health policy.</li> <li>Create new thinking and evidence that can be used to guide future policy through presentations whitepapers, case studies, blog articles</li> <li>Complete 'innovation scanning' to maintain a view of the competitive landscape.</li> </ul>
<b>Establishing a Governance Structure</b>	<ul style="list-style-type: none"> <li>Include a steering group and appoint clinical leads to provide direction and oversight.</li> <li>Undertake stakeholder mapping and define leadership roles to build a robust support system.</li> </ul>	<ul style="list-style-type: none"> <li>Establish relationships with key clinical experts and thought leaders and promote the benefits of innovation through tailored guides and toolkits</li> </ul>
<b>Identifying and Collaborating with Partners</b>	<ul style="list-style-type: none"> <li>Work with industry, the third sector, and service users to integrate diverse perspectives and expertise.</li> <li>Build goodwill with key stakeholders to create momentum and ensure a positive programme start.</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive stakeholder mapping and prioritisation with 4 key themes; those stakeholders to consult, partner with, inform and involve.</li> <li>Develop PIDs and business cases for wider procurement.</li> </ul>
<b>Building in Service User Input</b>	<ul style="list-style-type: none"> <li>Ensure the patient's voice is central to the programme, reflecting their needs and experiences.</li> <li>Capture and integrate patient feedback to inform continuous improvement.</li> </ul>	<ul style="list-style-type: none"> <li>Seek the involvement of people with lived experience in the community and voluntary sector</li> <li>Validate with Key Opinion Leaders (KoLs)</li> </ul>
<b>Developing Adoption and Spread Guidance</b>	<ul style="list-style-type: none"> <li>Create an implementation toolkit, engagement toolkit, and communications plan to support adoption.</li> <li>Utilise specific tools to communicate programme details and the approach to implementation</li> </ul>	<ul style="list-style-type: none"> <li>Embrace Digital Transformation and Technology</li> <li>Invest in a programme team or committee that specialises in value communication.</li> <li>Work with marketing teams to make training webinars, demos, etc</li> <li>Identify collaborative online workspaces for shared materials</li> </ul>
<b>Promoting Programme Success</b>	<ul style="list-style-type: none"> <li>Use established communication channels to regularly update stakeholders on programme progress.</li> <li>Raise awareness of the programme's positive impacts to encourage wider adoption.</li> </ul>	<ul style="list-style-type: none"> <li>Essential to put 'boots on the ground'.</li> <li>Share and learn from previous and current evidence of 'what works well'</li> <li>Collaborative workshops with programme leads</li> </ul>
<b>Establishing Communities of Practice</b>	<ul style="list-style-type: none"> <li>Promote shared learning and support through regular interaction among practitioners.</li> <li>Set up a dedicated workspace for programme leads to access toolkits and exchange knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>Create national and local CoPs to support post implementation sharing and learning across key stakeholders.</li> </ul>
<b>Supporting Implementation</b>	<ul style="list-style-type: none"> <li>Upskill project/programme staff to aid operational/clinical staff with implementation.</li> <li>Address the challenges of changing behaviour to ensure the sustainability of innovation.</li> </ul>	<ul style="list-style-type: none"> <li>Collect qualitative feedback from key stakeholders</li> <li>Conduct qualitative analysis by sorting the data using a framework approach with categories, themes and subthemes.</li> <li>Validate with thought leaders and disseminate findings.</li> </ul>

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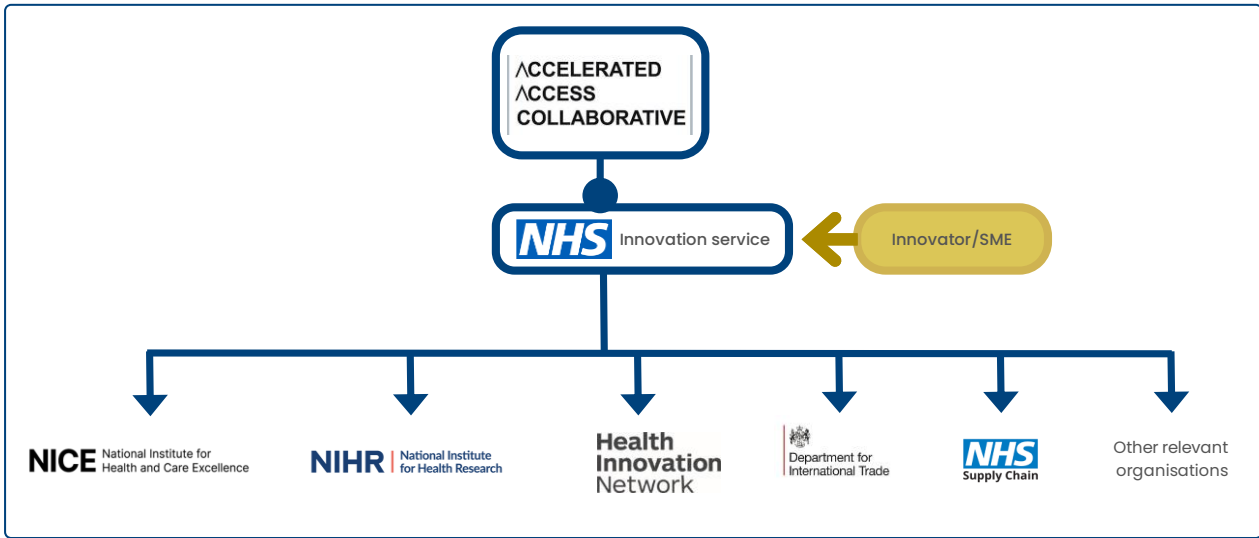
## Where should you put your energy? Kings Fund learning 3

- Building strong networks
- Changing structures and flows
- Changing the patterns of relationships and connections
- Aligning the goals of the system or organisation around a shared purpose
- Changing the ways of thinking, mindsets and paradigms

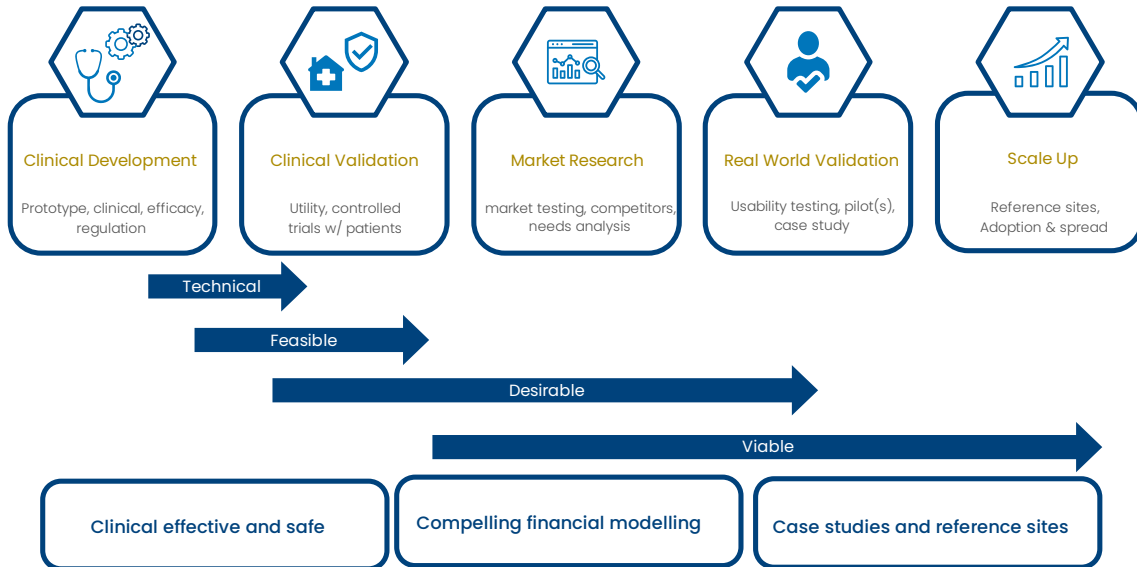
## Leeds Academic Health Partnership lessons and governance

- Funded by partners and grants– 3 universities, Council. AHSN, 4 Trusts plus associate members e.g. colleges, hospices, Integrated Care System, Combined Authority, Local Enterprise Partnership
- 3 million population
- Working to a shared purpose of reducing health inequalities
- Each organisation signed up to an MoU
- Funding levied depends on the headcount of the organisation
- Funding organisations have a vote on programmes
- 4 programmes – HealthTech, data, workforce innovation, cancer innovation
- Small core team who liaised with organisational innovation infrastructure included an Embedded Researcher, programme managers, data lead, communications team, Managing Director, Medical Director (part time), industry liaison team

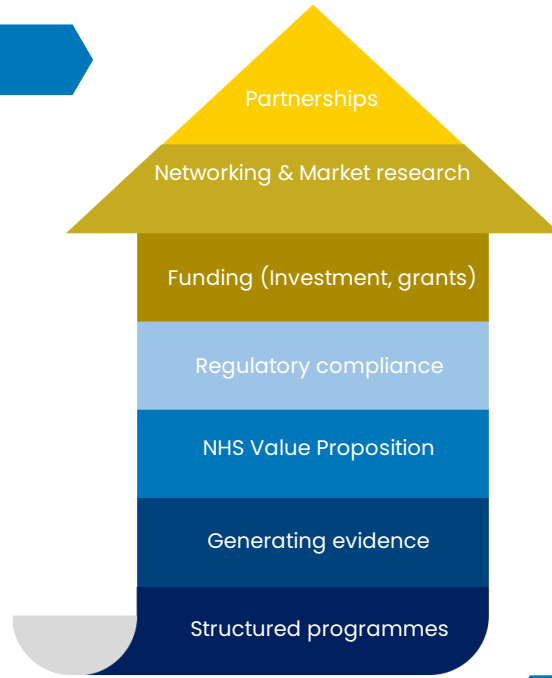
## NHS national Innovation Service – industry access



## Evidence: bench to bedside



## System engagement



## Innovation Accelerators:

The AHSN Network



NHS Innovation Accelerator

The NHS Innovation Accelerator impact

**2,882**

NHS sites using NIA innovations

**£200m**

raised in external funding to support better patient outcomes

**189**

awards won by NIA Fellows and their innovations

The NIA accelerates uptake of high-impact innovations for patient, population and NHS staff benefit. It also provides real-time practical insights on spread to inform national strategy.

The NIA is an NHS England initiative delivered in partnership with all 15 Heath Innovation Networks across England, hosted at UCLPartners.



**ACTION PLAN**

Fellows will develop a 12 month Action Plan detailing their scaling goals and milestones. Fellows will also develop a more detailed 12 week Sprint Plan covering their activities, hypotheses they wish to test and their support needs.

**COACH**

Each Fellow will have a coach who develops an in-depth understanding of their innovator, ambition and learning needs. They will offer the equivalent of around 12 days support over the initial 12 months through face-to-face, email and phone contact.

**MENTOR**

Fellows will - through a dynamic matching process - have access to a range of seasoned healthcare innovators. The nature of mentoring will vary for each Fellow - some having a single mentor for 12 months, others accessing a range of mentors for specific one-off advice/support.

**NIA PEER COMMUNITY**

Each Fellow brings to the programme a breadth of skills and knowledge. Fellows will share resources and problem-solve together at planned networking events and by creating further opportunities to work together on shared goals as diffusers.

**LEARNING PROGRAMME**

NIA Fellows will come together through launch events in July and then once a quarter. At these events, Fellows will take stock, share progress, collectively problem-solve, access practical frameworks/tools and expert challenge. Further opportunities to learn will be created in response to defined needs.

**BURSARY**

Fellows can each access a bursary of up to £50k. This will be allocated on a quarterly basis in response to their Sprint Plans. Eligible spend for the bursary includes: enabling/enhancing personal learning, enabling system engagement, innovation development, and information/analysis.



## Innovation Accelerators:

### Programmes

Our programmes provide bespoke advice, mentoring, education, peer networking, brand awareness and partnership opportunities, to digital health leaders who are tackling the biggest challenges facing patients, and NHS and Social Care staff.

Leap and Net Zero are now open for applications!

[Find the right programme for you](#)

**Leap**  
Fostering inclusivity and providing tailored support to founders from diverse backgrounds

**Net Zero**  
Helping companies attain environmental sustainability and manage their carbon footprint

**Launchpad**  
Helping companies launch a new product or service to the NHS

**Accelerator**  
Helping companies speed up spread and adoption

**Generator**  
Helping companies and academics to generate evidence

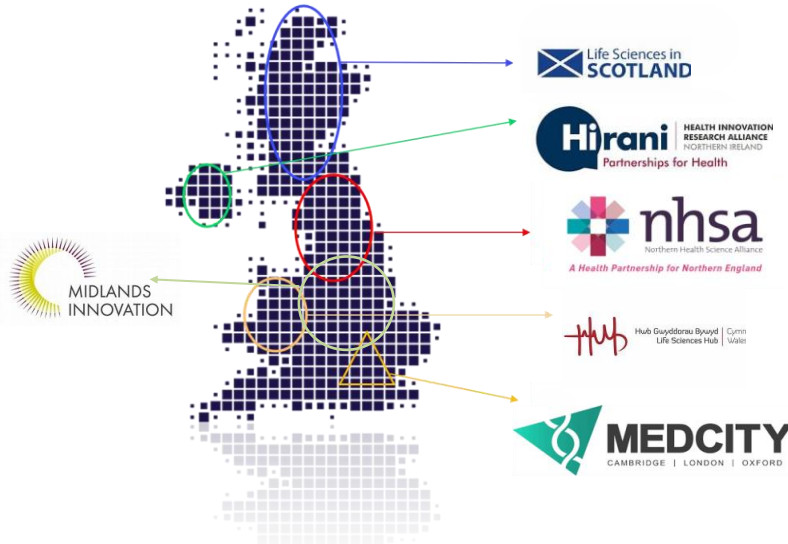
**Digital Pioneer Fellowship**  
Helping staff transform the NHS through digital

Funded by UK Government

Office for Life Sciences | SUPPORTED BY MAYOR OF LONDON | **LEVELLING UP**



## UK Cluster Organisations



## Appendix VI – Stakeholders Engaged

**Alan Harbinson**, Principal Statistician and Head of the Northern Ireland Health and Social Care Honest Broker Service

**Alex Chacko**, Head of Innovation and Enterprise, Ulster University

**Anne McGlade**, Social Care Research Lead, Northern Ireland Social Care Council

**Archie Clements**, Pro-Vice Chancellor Research and Enterprise, Queen's University Belfast

**Barry Henderson**, HSCNI Industry Senior Engagement Manager, Public Health Agency

**Ben Doran**, Director of Digital Operations, Business Services Organisation, HSCNI

**Bernadette Boyle**, Head of Project Delivery (iREACH Health), Queens University Belfast

**Brendan McGuigan**, Head of Life Sciences, Department of Economy

**Cathy Harrison**, Chief Pharmaceutical Officer, Department of Health NI

**Charlie Tuxworth**, Managing Partner & Founder, Celsio

**Chris Hill**, Renal Lead, Belfast Health and Social Care Trust

**Chris McCabe**, Programme Director, Queen's University Belfast

**Ciaran Shannon**, IMPACT Research Centre Director, Northern Health and Social Care Trust

**Claire Buchner**, Assistant Director of Digital Health and Nursing, DHCNI

**Cormac O'Brien**, ITS Head of Operations - Business Services Organisation, HSCNI

**Craig Young**, Programme Director - BSO Evolve, HSCNI

**Dan West**, Chief Digital Information Officer, Department of Health

**David Brownlee**, Innovation Advisor, HSC Innovations

**David Grier**, Encompass Medical Lead & Consultant Paediatrician, Southern Health and Social Care Trust

**David Wilson**, Stroke physician & CCEO, Southeastern HSC Trust

**Declan Bradley**, Deputy Director of Public Health, Public Health Agency

**Declan McAllister**, Director of Registration and Corporate Services, Northern Ireland Social Care Council

**Deidre Ferguson**, City Innovation Broker Smart Cities, Belfast City Council

**Dermot Hughes**, Encompass SRO, HSCNI

**Domenica Gilroy**, Programme Manager, HSCQI

**Joann Rhodes**, Chief Executive, HIRANI

**Jocelyn Harpur**, QI Lead, South Eastern Health and Social Care Trust

**Joe Kidney**, Respiratory Consultant, Belfast Health and Social Care Trust

**Jon Silversides**, Critical Care Consultant & Senior Clinical Lecturer, Queens University Belfast

**Jonathan Wallace**, Professor of Innovation at Faculty of Computing & Engineering, University of Ulster

**Joy Beaumont**, Senior Programme Manager, DHCNI

**Julia Wolf**, R & D Manager, Northern Ireland Ambulance Service HSC Trust

**Julie McCullough**, HSCNI Industry Engagement Manager, Public Health Agency

**Karen Beattie**, Research Officer, Public Health Agency

**Kerry Curran**, Director - GB and EU Trade Division, Department of Economy

**Leroy Dowe**, Business Development Manager, School of Biomedical Sciences, University of Ulster

**Lesley McGrann**, System Blueprint and Digital Commissioning Lead, HSCNI

**Lisa Whyte**, Senior Programme Manager, DHCNI

**Lloyd Humphries**, Managing Director, Cogniss

**Marion Laverty**, Public Affairs Manager, ABPI Northern Ireland

**Mark Tully**, Associate Research Director in the School of Medicine, University of Ulster

**Maurice Mulvenna**, Professor of Computer Science, Ulster University

**Melanie Morris**, Operational Director NI Cancer Trials Network and Belfast ECMC, Belfast Health and Social Care Trust

**Mick Quinn**, Healthcare Informatician & Consultant Physician, Queen's University Belfast

**Mike Scott**, Director, MOIC

**Paddy Stirling**, General Practitioner & Entrepreneur, HSCNI

**Paschal McCloskey**, Centre Director, Connected Health Innovation Centre

**Paul Beaney**, Head of Project Delivery, The Centre for Digital Technology

**Paul Moorhead**, Previous Chief research Officer, Kraydel

**Paul O'Neill**, Founder, NoliWork

**Dominic Holmes**, CEO, eXrt Intelligent Healthcare

**Dr Patrick Donnelly**, R & D Director, South Eastern Health and Social Care Trust

**Eddie O'Neill**, Medical Adviser, Department of Health

**Eddie Ritson**, Programme Director, DHCNI

**Emma Dunn**, Researcher & Specialist Occupational Therapist in Stroke Rehabilitation, Belfast Health and Social Care Trust

**Enda Reynolds**, Solution Director, Civica

**Eoin McFadden**, R&D Policy (including Innovation Driven Enterprises), Department of Economy

**Fergus McGrath**, Central Government Health Lead, Civica

**Frances Burns**, Lead for Control of Data Processing Legislation, HSCNI

**Frances Duffy**, Clinical Psychologist & Entrepreneur, HSCNI

**Frank Kee**, Deputy Director for the Centre for Public Health, Queens University Belfast

**Gary Loughran**, Programme Director Encompass, Business Services Organisation, HSCNI

**Grainne McVeigh**, Director Advanced Manufacturing and Engineering, Department of Economy

**Iain Styles**, Professor, School of Electronics, Electrical Engineering and Computer Science, Queens University Belfast

**Ian Young**, Chief Scientific Adviser, Department of Health

**James Nelson**, Chief Clinical Information Officer, Northern Health and Social Care Trust

**Jan Edgar**, Consultant to DHCNI, DHCNI

**Janice Baillie**, Assistant Director R&D, HSCNI

**Joan Condell**, Professor of Intelligent Technologies, Ulster University

**Paul Toner**, City & Growth Deals Manager, Department of Economy

**Penny Hobson**, Finance Lead, DHCNI

**Peter McGuigan**, Critical Care Clinical Lead, Belfast Health and Social Care Trust

**Rachael Adams**, Senior Innovation & Market Development Manager, BSO, HSCNI

**Rachelle Moore**, R&D Manager, Southern Health and Social Care Trust

**Raj Kher**, Commercial Manager, Whitespace

**Rebecca Walsh**, Director, Big Motive

**Robert Moore**, Telehealth Service Manager, South Eastern Health and Social Care Trust

**Roisin Molloy**, CEO & Founder, TriMedika

**Sara McCracken**, CEO & Creator, EmpathEyes Vision Impairment Simulator

**Sean Maguire**, QI Lead, Northern Ireland Ambulance Service HSC Trust

**Sinead Hannan**, Clinical Psychologist, Southern Health and Social Care Trust

**Siobhan McGrath**, Chief Operating Officer, HIRANI

**Sloan Harper**, GP Medical Adviser, Department of Health

**Soo Hun**, Innovation & Digital Eco-system Lead, DHCNI

**Stephen McCabe**, Head of Project Delivery (GII), Queen's University Belfast

**Stephen Powell**, ICT Head of Programmes and Projects, South Eastern Health and Social Care Trust

**Stuart Elborn**, Life & Health Science Lead, Queen's University Belfast

**Tunde Peto**, Professor of Clinical Ophthalmology, Queen's University Belfast



# Healthcare Innovation Consortium

*Because innovation is everyone's business, we've made it ours*



## Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Discovery Phase As Is Landscape

April 2024

## Introduction

This report provides an overview of the current research and innovation landscape in Northern Ireland. It includes details on existing innovation initiatives and organisations, ongoing work, as well as the available resources in the region. Additionally, it explores the potential for pooling resources in research, quality improvement, and digital innovation. Drawing from publicly available information and insights gathered from project stakeholder engagement, the report presents a comprehensive outline of the current system landscape alongside other pertinent information.

## A Healthcare Innovation Ecosystem

In the context of healthcare, a research and innovation ecosystem represents the interconnected framework comprising various stakeholders, resources, and processes aimed at advancing scientific knowledge and technological solutions to enhance health outcomes and patient care. This intricate network involves researchers, clinicians, policymakers, industry partners, funding agencies, and patients collaborating across diverse domains to drive innovation from discovery through to implementation. Through a culture of continuous learning, experimentation, and collaboration, this ecosystem leverages expertise, infrastructure, and funding mechanisms to address healthcare challenges, develop novel interventions, and translate research findings into practical applications. Essential components include research institutions, funding mechanisms, collaborative networks, technological infrastructure, regulatory frameworks, and supportive policies, all working harmoniously to stimulate innovation and foster the adoption of evidence-based practices for the improvement of individuals and communities. Northern Ireland has a strong foundation built upon ambitious digital strategies, collaborative initiatives, and a well-developed system of research and development, which are explored in this section.

## Organisations

### DHCNI - Digital Health and Care NI

- DHCNI focuses on harnessing digital technologies to transform health and social care delivery in Northern Ireland. They develop and implement digital solutions to improve patient care, enhance efficiency, and promote innovation in healthcare services.
- DHCNI collaborates with healthcare providers, technology vendors, government agencies, and research institutions to drive digital health initiatives.
- Projects and programmes include:
  - Encompass
  - CoreLIMS
  - NIPACS+
  - Cyber
- **Role in the Ecosystem:** DHCNI serves as a central hub for digital health innovation, driving collaboration and adoption of technology-enabled solutions across the healthcare ecosystem.

### Stakeholder Perceptions

- Stakeholders within DHCNI express a desire for “more action and less talk”, suggesting a need for tangible progress in innovation efforts. They also note a lack of resources dedicated to digital initiatives. Additionally, concerns are highlighted about the perceived siloed nature of DHCNI internally.
- **HSC Stakeholder Perceptions:** Stakeholders express a desire for “more action and less talk”, suggesting a need for tangible progress in innovation efforts. They also note a lack of resources dedicated to digital initiatives. Additionally, concerns are highlighted about the perceived siloed nature of DHCNI internally.

- **External Stakeholder Perceptions:** Stakeholders emphasise the role of DHCNI in enhancing collaborations that lead to improvements in the quality of care. 23% of HSC stakeholders have never heard of DHCNI, while 39% work with them regularly.

## HIRANI - Health Innovation Research Alliance Northern Ireland

- HIRANI is a collaborative network of healthcare professionals, researchers, and industry partners focused on advancing health innovation in Northern Ireland. They facilitate interdisciplinary research projects, knowledge exchange, and technology transfer to address healthcare challenges and improve patient outcomes.
- HIRANI fosters partnerships between academia, industry, healthcare providers, and government agencies to support innovation in health research and service delivery.
- Projects and initiatives include:
  - NHS Clinical Entrepreneurs Programme
  - All-Ireland Medtech
- **Role in the Ecosystem:** HIRANI plays a vital role in promoting collaboration and innovation in health research, driving translational efforts to translate scientific discoveries into clinical practice.

## Stakeholder Perceptions

- Stakeholders within HIRANI express feelings of being somewhat sidelined and not sufficiently involved in decision-making processes. They perceive a gap in their capacity to fully fulfil their role (being the front door of innovation), citing resource limitations as a hindrance. While efforts to understand priorities and engage with various groups have been made through organised meetings, there remains a reluctance to fully embrace collaboration with them.
- **HSC Stakeholder Perceptions:** HSC stakeholders express concerns about the visibility of progress regarding HIRANI's engagement with the healthcare sector, suggesting a need for clearer communication and alignment. Clinical Entrepreneur stakeholders highlight HIRANI's effectiveness in facilitating connections between innovators and Trusts.
- **External Stakeholder Perceptions:** Stakeholders express uncertainty about the role and positioning of HIRANI within the healthcare system. Suggestions are made for HIRANI to emulate the BioInnovate Ireland Fellowship Programme as they are in a good position to foster wider collaboration outside the HSC. There is recognition of HIRANI's potential to facilitate collaboration between key decision-makers from the Northern Ireland Health and Social Care sector and industry partners, indicating its importance as a bridge between sectors within the healthcare ecosystem.

## MOIC - Medicines Optimisation Innovation Centre

- MOIC focuses on optimising medication use and improving patient outcomes through innovative pharmacy practices and research. They collaborate with healthcare professionals, patients, and industry partners to develop and implement strategies for safe, effective, and cost-efficient medication management.
- MOIC partners with pharmaceutical companies, healthcare providers, academic institutions, and regulatory bodies to conduct research, develop guidelines, and promote best practices in medicines optimisation.
- Projects include:
  - Cardiometabolic pharmacy service in cardiovascular disease
  - COMET Study for COVID19 patients
- **Role in the Ecosystem:** MOIC serves as a leading resource for medication optimisation research, education, and innovation, promoting collaboration and knowledge exchange among stakeholders in the healthcare ecosystem.

### Stakeholder Perceptions

- Stakeholders within MOIC generally perceive it as having a clear identity and synergy within its operations. There is a suggestion that the MOIC model (similar to AHSN model) should be adopted in NI to move towards a model of innovation. Collaboration with European partners and strong links with pharmaceutical companies are highlighted as a success.
- **HSC Stakeholder Perceptions:** Stakeholders highlight the success of MOIC being established using an AHSN model, which emphasises evaluating work for clinical impact and effectiveness. Some innovations originating from MOIC have achieved international recognition. MOIC collaborates closely with the HSC Industry Engagement.
- **External Stakeholder Perceptions:** MOIC is perceived by external stakeholders as doing notable work in medicines optimisation. However, as it is primarily focused on research, they believe MOIC lacks engagement with industry partners.

### C-TRIC - Clinical Translational Research and Innovation Centre

- C-TRIC is a translational research hub dedicated to accelerating the translation of scientific discoveries into clinical practice and commercial products. They facilitate collaboration between academia, healthcare providers, industry partners, and patients to drive innovation in healthcare technologies, diagnostics, and therapeutics.
- C-TRIC collaborates with universities, hospitals, biotech companies, and government agencies to support translational research projects, clinical trials, and technology commercialisation efforts.
- Projects include:
  - Expressed Human Breast Milk Microbiota Study (EHBMMMS)
- **Role in the Ecosystem:** C-TRIC serves as a catalyst for translating research discoveries into clinical innovations, bridging the gap between academia and industry to deliver impactful healthcare solutions.

### Stakeholder Perceptions

- Stakeholders within C-TRIC acknowledge that the organisation maintains close collaboration with HSC Industry Engagement.
- **HSC Stakeholder Perceptions:** Stakeholders suggest that C-TRIC should be granted more autonomy.
- **External Stakeholder Perceptions:** C-TRIC is perceived by external stakeholders as primarily focused on research and lacks in engagement with industry partners. The majority of external stakeholders (60%) have either worked with them or work with them regularly (mainly academia).

### HSCQI - Health and Social Care Quality Improvement

- HSCQI is dedicated to driving continuous improvement in health and social care services across Northern Ireland. They provide leadership, expertise, and support to healthcare organisations and professionals in implementing quality improvement initiatives, enhancing patient safety, and optimising clinical outcomes.
- HSCQI collaborates with healthcare trusts, regulatory bodies, patient advocacy groups, and academic institutions to promote a culture of quality improvement, evidence-based practice, and innovation in the delivery of care.
- Projects and programmes include:
  - Timely Access to Safe Care (TASC)
- **Role in the Ecosystem:** HSCQI serves as a central hub for promoting best practices, fostering collaboration, and driving innovation in quality improvement within the healthcare system of Northern Ireland.

## Stakeholder Perceptions

- There was a lack of engagement from HSCQI stakeholders, therefore no available data on their internal perspectives.
- **HSC Stakeholder Perceptions:** HSC Stakeholders view HSCQI as focusing on implementing small tests for changes and establishing robust quality improvement strategies within each trust. Stakeholders perceive this structure as a valuable resource to enhance quality improvement initiatives and drive positive change across the system.
- **External Stakeholder Perceptions:** External stakeholders perceive HSC Quality Improvement as having significant potential for collaboration and growth, although currently constrained by capacity limitations. HIRANI has identified substantial opportunities for collaboration with QI, noting their extensive clinical networks, but suggests that QI's current workload may hinder deeper engagement. Stakeholders emphasise the importance of expanding QI's capacity and involvement to fully leverage their expertise and drive impactful quality improvement initiatives.

## HSC Innovations

- HSC Innovations facilitates the translation of innovative ideas and technologies into healthcare solutions that address unmet clinical needs and improve patient care outcomes. They provide support in intellectual property management, technology transfer, commercialisation strategies, and industry engagement to researchers, inventors, and entrepreneurs within the healthcare sector.
- HSC Innovations collaborates with academic institutions, healthcare providers, industry partners, venture capitalists, and government agencies to identify, evaluate, and commercialise promising innovations with commercial potential and societal impact.
- **Role in the Ecosystem:** HSC Innovations plays a pivotal role in fostering a culture of innovation, entrepreneurship, and technology transfer within the healthcare ecosystem of Northern Ireland, driving economic growth and societal benefit.

## Stakeholder Perceptions

- Stakeholders within HSC Innovations highlight the importance of HSC Innovations' close partnership with MOIC.
- **HSC Stakeholder Perceptions:** Stakeholders express a need for clearer understanding of the role and activities of HSC Innovations, advocating for greater engagement with the wider industry. Concerns are raised regarding their capacity issues and the lack of support mechanisms for innovators, noting that it's a small team covering all NI Trusts. However, there is optimism with the imminent recruitment of a data scientist, indicating a step towards addressing capacity challenges.
- **External Stakeholder Perceptions:** Stakeholders highlight efforts by HIRANI to collaborate but note that outdated policies surrounding intellectual property (IP) pose significant barriers to innovation. The prevailing sentiment is that IP issues present a substantial obstacle to progress in the innovation landscape, underscoring the need for policy updates. 54% of external stakeholders have either worked with them, or work with them regularly.

## NICRN - Northern Ireland Clinical Research Network

- NICRN facilitates and supports clinical research initiatives across Northern Ireland, aiming to improve patient care through evidence-based practice and innovation. They provide infrastructure, resources, and expertise to enable the conduct of high-quality clinical trials and research studies in diverse therapeutic areas, ranging from pharmaceuticals and medical devices to public health interventions and healthcare delivery models.
- NICRN collaborates with healthcare trusts, academic institutions, pharmaceutical companies, regulatory bodies, patient advocacy groups, and international research networks to enhance research capacity, recruit participants, and ensure adherence to ethical and regulatory standards.



- **Role in the Ecosystem:** NICRN plays a vital role in advancing clinical research, knowledge translation, and evidence-based practice within the healthcare ecosystem of Northern Ireland, contributing to improved patient outcomes and healthcare delivery.

### Stakeholder Perceptions

- **HSC Stakeholder Perceptions:** 29% of HSC stakeholders have never heard of NICRN, while 42% have worked with them or work regularly with them.
- **External Stakeholder Perceptions:** NICRN's focus is primarily centred on clinical trials for medicines, with less emphasis on innovation initiatives. Their engagement metrics largely revolve around interactions with major clinical pharmaceutical companies, suggesting a narrower scope of collaboration beyond traditional research activities.

### HSC Industry Engagement

- HSC Industry Engagement facilitates collaboration between the healthcare sector and industry partners to drive innovation, commercialisation, and economic growth in Northern Ireland. They provide support and guidance to healthcare professionals, researchers, and industry stakeholders interested in developing and commercialising healthcare technologies, products, and services.
- HSC Industry Engagement collaborates with pharmaceutical companies, medical device manufacturers, biotechnology firms, digital health startups, venture capital firms, and trade associations to identify opportunities for collaboration, investment, and knowledge exchange.
- Projects and initiatives include:
  - Innovation Evaluation Framework
  - Demographics and Patient Cohort Health Data Scientist Business Case
- **Role in the Ecosystem:** HSC Industry Engagement serves as a bridge between the healthcare sector and industry, facilitating cross-sectoral collaboration, knowledge transfer, and commercialisation of healthcare innovations to benefit patients, clinicians, and the economy.

### Stakeholder Perceptions

- HSC Industry Engagement views its role as facilitation, they guide innovators towards suitable pathways for development and implementation. Their close collaboration with procurement ensures that healthcare needs align with available solutions. Embedded within the healthcare system, they leverage extensive connections to facilitate innovation adoption. Their association with HSC lends credibility and fosters receptiveness to new ideas. They express eagerness to coordinate efforts with entities like MOIC and C-TRIC to ensure innovations meet patient needs and receive adequate support.
- **HSC Stakeholder Perceptions:** HIRANI and the HSC Industry Engagement unit play complementary yet distinct roles in engaging with industry partners. While both entities facilitate collaborations, HIRANI primarily emphasises economic metrics, whereas the HSC Industry Engagement team mainly focus on patient and health outcomes. This group serve as a referral point to entities like MOIC.
- **External Stakeholder Perceptions:** HIRANI allocates approximately 43% of their business development efforts around procurement to HSC Industry Engagement. There is a perceived overlap in roles between this organisation and the Procurement and Logistics Service (PaLS). 27% of external stakeholders have never heard of them, while 33% have worked with them or work regularly with them.

### HSC R&D Division - Research and Development

- The HSC R&D Division promotes and supports research and development activities across the Health and Social Care (HSC) sector in Northern Ireland, aiming to improve patient outcomes and service delivery. They provide

funding, infrastructure, and governance support to researchers, clinicians, and healthcare organisations engaged in clinical and translational research projects, ranging from basic science to applied health research.

- The HSC R&D Division collaborates with academic institutions, healthcare trusts, funding agencies, patient advocacy groups, and government bodies to build research capacity, foster innovation, and address priority health challenges.
- **Role in the Ecosystem:** The HSC R&D Division plays a pivotal role in fostering a culture of research excellence, innovation, and evidence-based practice within the HSC sector of Northern Ireland, driving improvements in patient care and population health.

### Stakeholder Perceptions

- They are actively involved with HSC Innovations, providing support through their innovations advice service, and exploring licensing opportunities for ideas that benefit patients. They also collaborate closely with HSC Innovations (integrated into core R&D team).
- **HSC Stakeholder Perceptions:** The R&D division actively communicates its initiatives and projects within the healthcare system, but stakeholders often lack awareness of their activities, resulting in limited understanding and appreciation of their scale and impact. Despite their efforts to engage with others, there remains a gap in awareness regarding the scope and importance of R&D activities.
- **External Stakeholder Perceptions:** The HSC R&D division is primarily focused on facilitating medicine trials, which may limit opportunities for broader collaboration within the innovation ecosystem. However, despite resource constraints, stakeholders acknowledge their effectiveness in engaging clinicians and health professionals in research and development activities.

### PaLS - Procurement and Logistics Service

- PaLS is responsible for managing procurement, logistics, and supply chain operations to ensure the efficient and cost-effective delivery of goods and services across the Health and Social Care (HSC) sector in Northern Ireland. They oversee procurement processes, contract management, inventory control, and distribution of medical equipment, pharmaceuticals, consumables, and non-clinical services to healthcare facilities and providers within the HSC system.
- PaLS collaborates with healthcare trusts, government agencies, suppliers, manufacturers, distributors, and regulatory authorities to optimise procurement strategies, negotiate contracts, and mitigate supply chain risks.
- **Role in the Ecosystem:** PaLS plays a critical role in supporting the operational efficiency, financial sustainability, and regulatory compliance of the HSC sector in Northern Ireland by managing procurement and logistics functions effectively.

### Stakeholder Perceptions

- PaLS perceives its role as crucial in streamlining innovation adoption processes, evidenced by its implementation of a SharePoint system akin to HSC IE's process. Stakeholders advocate for system-wide accessibility to this form to enhance transparency and collaboration across organisations. Concerns about sustainability of funding arise, highlighting the need for more long-term support. They set up their governance processes themselves but get guidance from DHCNI when needed.
- **HSC Stakeholder Perceptions:** 53% of HSC stakeholders have worked with, or work closely with PaLS, which is the highest percentage of collaboration between the internal stakeholder groups.
- **External Stakeholder Perceptions:** 25% of external stakeholders have never heard of PaLS.

## CHIC - Northern Ireland Connected Health Innovation Centre

- CHIC is a collaborative hub focused on driving innovation in connected health technologies and solutions to enhance healthcare delivery and patient outcomes. They facilitate research, development, and implementation of digital health solutions, leveraging technologies such as telehealth, remote monitoring, wearables, and health informatics to address healthcare challenges and improve access, efficiency, and quality of care.
- CHIC collaborates with academic institutions, healthcare providers, industry partners, government agencies, and patient groups to co-design, pilot, and scale innovative connected health solutions, fostering cross-sectoral collaboration and knowledge exchange.
- Projects and programmes include:
  - Rapid community-based diagnostics
  - Wireless data acquisition from assistive devices to determine efficacy
- **Role in the Ecosystem:** CHIC serves as a catalyst for innovation, collaboration, and knowledge transfer in the field of connected health, driving the adoption and integration of digital solutions into the healthcare ecosystem of Northern Ireland.

## Public Health Agency

- The Public Health Agency (PHA) in Northern Ireland, established in 2009, plays a pivotal role in safeguarding and enhancing the health and social wellbeing of the population. The PHA operates as a multi-disciplinary, multi-professional body, focusing on health protection, health and social wellbeing improvement, and research and development within the HSC sector.
- Partnering with individuals, communities, and various public, private, and voluntary organisations.
- **Role in the Ecosystem:** The Public Health Agency (PHA) plays a central role in promoting and protecting public health, fostering collaboration across sectors, and addressing health inequalities within the healthcare ecosystem of Northern Ireland.

## Northern Ireland Biobank

- Established in 2011, the Northern Ireland Biobank (NIB) operates from the Patrick G Johnston Centre for Cancer Research (PGJCCR) at Queen's University Belfast. Initially focused on cancer biobanking in partnership with the Belfast Health and Social Care Trust, NIB has evolved into a regional research infrastructure, facilitating translational biomarker research across various health conditions in Northern Ireland and beyond. Core funding is provided by The Research and Development Division of the Health and Social Care Public Health Agency.
- **Role in the Ecosystem:** As a biobank, NIB plays a crucial role in the research and innovation ecosystem by providing researchers with access to high-quality biospecimens and associated health information. These resources accelerate discoveries in disease prediction, diagnosis, and treatment. By facilitating access to samples and data, NIB supports efforts to find new ways to diagnose and treat diseases, develop, and test new drugs, and personalise treatments for specific patient groups.

## Stakeholder Perceptions on Organisations

The internal stakeholder feedback regarding innovation groups in Northern Ireland highlights several key points. Firstly, 21% of internal stakeholders feel there is an overlap between these organisations, however, this is mainly concerning administrative functions rather than the topics they cover. This potential inefficiency in administration can theoretically hinder their effectiveness, especially considering the common challenges they face regarding funding, resources, and relationship dynamics across different stages of innovation. Additionally, the feedback acknowledges the existence of silos within the groups, but attributes this more to individual personalities rather than inherent flaws within the groups themselves. Despite these silos, there seems to be a recognition that the groups work synergistically, avoiding duplication of efforts and coming together to capitalise on shared opportunities. Overall, the internal feedback highlights the need for streamlining administrative processes (such as funding, resource management and relationship building), fostering collaborative efforts, and addressing any existing silos to enhance the effectiveness of innovation groups in Northern Ireland.

External stakeholder feedback indicates that a more considerable portion (43%) of stakeholders perceive overlap between the existing innovation organisations, implying potential inefficiencies that could be addressed through better coordination or consolidation efforts. Some stakeholders express a view that adopting a unified Academic Health Science Network (AHSN)-style model in Northern Ireland would significantly enhance collaboration within the healthcare innovation ecosystem, potentially leading to more effective outcomes, however they acknowledge the challenge of swiftly transitioning towards an AHSN-style model due to the abundance of existing innovation groups.

Appendices I and II present the depth of knowledge of internal stakeholder groups among internal and external stakeholders respectively.

## Solutions and Initiatives transforming healthcare in NI

This section delves into a collection of case studies highlighting successful initiatives and innovative solutions within Northern Ireland's health and social care system. These case studies offer real-world examples of how collaboration, innovation, and forward-thinking approaches are reshaping healthcare delivery for the benefit of Northern Ireland's residents. From groundbreaking digital solutions to initiatives aimed at fostering innovation, each case study demonstrates the diverse range of efforts underway to enhance healthcare delivery, foster better patient experiences, and address the evolving needs of the NI population.

### Case Study 1: Encompass – Transforming Healthcare Delivery in NI

Encompass represents a groundbreaking initiative within the Northern Ireland Health and Social Care system, aiming to revolutionise patient care through the implementation of a unified digital care record system. Developed by local expertise and guided by a vision of enhanced patient safety and quality of care, Encompass is poised to reshape the healthcare landscape of Northern Ireland.

**Purpose and Objectives:** Encompass seeks to create a single digital care record for every citizen in Northern Ireland receiving health and social care, with the overarching goal of providing the safest and highest quality of care possible. By consolidating health information into a unified platform, Encompass aims to empower patients, streamline care delivery, and facilitate informed decision-making by healthcare professionals.

**Implementation Timeline:** The initiative commenced with its implementation in the South Eastern Health & Social Care Trust in November 2023, marking the beginning of a phased rollout across all Health and Social Care Trusts in Northern Ireland. By the end of 2025, Encompass is slated to be fully operational in all Trusts, ensuring equitable access to digital care records for patients across the region.

**Key Features and Benefits:** Encompass offers patients and service users the ability to view and update their health information online, enhancing accessibility and promoting patient engagement. For healthcare professionals, Encompass facilitates seamless access to critical patient information, both in clinical settings and community care environments. By eliminating the inefficiencies of paper-based records and fragmented data sources, Encompass streamlines processes, enhances patient safety, and improves the overall quality of care delivery.

**Collaborative Approach:** Led by Dr. Dermot Hughes, with Dr. Raied Abdul-Karim serving as the Programme Director, Encompass embodies a collaborative effort involving multidisciplinary teams from across the Health and Social Care system. Partnering with Epic, a global leader in electronic health records, the Encompass team is dedicated to designing and implementing a system tailored to the specific needs of Northern Ireland.

**Future Implications:** As Encompass continues its phased rollout, it is poised to bring about transformative change in healthcare delivery in Northern Ireland. By providing immediate access to vital health information, streamlining processes, and fostering collaboration among healthcare professionals, Encompass sets the stage for a more efficient, effective, and patient-centric healthcare ecosystem.

Encompass stands as a testament to Northern Ireland's commitment to innovation and excellence in healthcare delivery. By harnessing the power of technology and collaboration, Encompass paves the way for a future where patient care is seamless, integrated, and truly patient-centred.

## Case Study 2: NIPACS+: Advancing Diagnostic Imaging in Northern Ireland

NIPACS+ (Northern Ireland Picture Archiving and Communications System+) heralds a new era in diagnostic imaging, poised to revolutionise patient care across the region. Rooted in over a decade of progress through the original NIPACS initiative, NIPACS+ represents a significant leap forward in digital archiving capabilities, enabling seamless access to patient images for healthcare professionals.

**Objective and Impact:** NIPACS+ aims to consolidate Northern Ireland's diagnostic imaging services into a unified digital archiving system, allowing clinicians to access patient images instantly from any hospital within the region. With an estimated capital investment of £50 million, this initiative is set to benefit approximately two million examinations per year, enhancing patient care through timely diagnoses and improved access to critical imaging data.

**Key Features and Benefits:** By transitioning to a single imaging system, NIPACS+ eliminates the barriers of siloed information, enabling healthcare professionals to access all necessary imaging data from a centralised platform. This facilitates secondary consultations, enhances cooperation among medical teams, and ultimately leads to enhanced patient care, reduced costs, and increased efficiency in healthcare delivery.

**Collaborative Approach:** Led by the HSC Business Services Organisation (BSO), NIPACS+ embodies a collaborative effort involving multidisciplinary teams from across the Health and Social Care system. Integration with the encompass initiative further enhances the accessibility of imaging data, aligning with Northern Ireland's broader strategy for digital healthcare transformation.

**Implementation Timeline:** The implementation of NIPACS+ is conducted in two phases. Phase 1 focuses on the regional implementation of radiology services, with the Royal Victoria Hospital serving as the final site for this phase. Phase 2 extends the system to additional imaging specialties, including cardiology, oncology, obstetrics, and more, ensuring comprehensive coverage across the healthcare spectrum.

**Future Implications:** As NIPACS+ continues its phased rollout, it holds the promise of transforming diagnostic services in Northern Ireland. By standardising access to imaging data, fostering collaboration among medical teams, and optimising patient care pathways, NIPACS+ sets the stage for a more efficient, effective, and patient-centric healthcare system.

NIPACS+ stands as another testament to Northern Ireland's commitment to innovation, streamlining diagnostic imaging and fostering collaboration across the region. Its integration with encompass ensures a unified approach to patient care, enhancing efficiency and accessibility.

### Case Study 3: NHS Clinical Entrepreneur Programme (CEP)

The NHS Clinical Entrepreneur Programme (CEP) is a year-long initiative fostering entrepreneurial and innovative thinking among healthcare professionals. With committed funding from Invest NI, Northern Ireland's healthcare professionals have the opportunity to participate in the Programme until March 31, 2026, in collaboration with the Health Innovation Research Alliance NI (HIRANI), HSC, and NHS.

**Objectives and Impact:** The programme aims to empower the healthcare workforce to develop and scale innovative ideas for the benefit of patients, staff, and the NHS at large. It seeks to equip participants with the skills, knowledge, and leadership capabilities necessary to drive innovation in areas such as digital health, genomics, data analytics, and advanced technology while remaining within the health service. By supporting invention, commercialisation, and adoption of new products, services, and care pathways, CEP contributes to innovation, economic growth and the transformation of healthcare delivery.

**Delivery and Curriculum:** Delivered by Anglia Ruskin University, CEP is part of the NHS Accelerated Access Collaborative (AAC), collaborating with industry, government, regulators, patients, and the NHS to facilitate the introduction of groundbreaking treatments and diagnostics. The curriculum covers various aspects of entrepreneurship, including business setup, funding acquisition, communication, and legal considerations. Participants receive guidance on building and running startups through educational events and mentorship opportunities with industry experts.

#### Key Features:

- **Workforce Development:** CEP caters to clinical and non-clinical NHS or HSC staff, selected through a competitive recruitment process, including doctors, dentists, nurses, allied health professionals, managers, and administrative staff.
- **Programme Structure:** Run by NHS England and NHS Improvement, the programme encompasses business essentials such as attracting investors, funding application, and corporate governance.
- **Support Services:** Participants benefit from mentoring, networking, education, resource access, and development tools to facilitate their entrepreneurial journey.

**Impact:** To date, CEP has secured over £225 million in funding, created over 1,000 jobs, and positively impacted 16 million users, illustrating its significant contribution to healthcare innovation and economic growth.

**Limitations:** Three interviewees involved in the Clinical Entrepreneurs Programme (CEP) expressed challenges in implementing their products within the Northern Ireland Trusts due to the Trusts' non-participation in the scheme. While one interviewee managed to establish connections independently, the others emphasised the necessity for changes to ensure that healthcare organisations in Northern Ireland and procurement processes are aligned with and participate in the CEP scheme.

## Case Study 4: Institute of Research Excellence for Advanced Clinical Healthcare (iREACH)

The Institute of Research Excellence for Advanced Clinical Healthcare (iREACH) represents a groundbreaking initiative in Northern Ireland's healthcare landscape. Developed through collaboration among academia, industry, the NHS, and government stakeholders, iREACH aims to drive scientific innovation by establishing a unique ecosystem for testing new drugs and integrating them into care pathways.

**Objectives and Impact:** Led by Queen's University Belfast in partnership with the NHS, iREACH aims to advance research excellence in Advanced Clinical Healthcare in Northern Ireland. By extending capacity for clinical trials within the Belfast Region, iREACH enhances access to treatments for patients and signals industry expansion in Northern Ireland's healthcare sector. The cohesive integration of academic expertise, research intensity, and healthcare trust resources fosters a more connected healthcare system, promoting better treatments and technologies.

**Facility Features:** iREACH serves as an extension and integration of existing healthcare facilities, providing unified capability for clinical trials and innovation in the Belfast Region. By co-locating academic and industry partners with NHS resources, iREACH creates an environment conducive to collaboration and accelerated innovation. The facility offers incubation spaces for high-growth businesses, fostering accessibility to healthcare in practice and accelerating the pace of innovation.

**Integration and Synergies:** Aligned with other City Deal Innovation projects, iREACH leverages synergies with data analytics capabilities and the Centre for Digital Healthcare Technology, fostering innovation and collaboration across sectors. By integrating academic, industry, NHS, and government stakeholders, iREACH facilitates alignment of expertise, resources, and priorities to drive economic growth and better health outcomes.

**Public Benefit:** iREACH delivers wide-ranging benefits for the entire region, increasing efficiency within the healthcare system and providing scope for increased research opportunities. Through state-of-the-art clinical facilities and partnerships with patients and the public, iREACH ensures that its activities meet the needs of stakeholders. Ultimately, iREACH aims to drive economic development, attract talent, and deliver better health outcomes for the people of Northern Ireland and beyond.

iREACH represents a significant leap forward for Northern Ireland's innovation landscape, uniting academia, industry, and healthcare to drive scientific advancement. By fostering collaboration, enhancing research capacity, and leveraging state-of-the-art facilities, iREACH promises to propel Northern Ireland to the forefront of advanced clinical healthcare innovation, ultimately benefiting patients and fostering economic growth in the region.



## Key Innovation Champions

This section explores the local champions and partners driving innovation within Northern Ireland's dynamic healthcare landscape. These exemplars represent a diverse array of individuals dedicated to advancing healthcare delivery and catalysing transformative change. Each profile sheds light on the invaluable contributions made by these champions and partners in fostering innovation, improving patient outcomes, and shaping the future of healthcare in Northern Ireland. Through their collective efforts and unwavering commitment, they exemplify the spirit of collaboration and innovation that defines Northern Ireland's healthcare ecosystem.

### Dr. Patrick Stirling

Patrick Stirling, a general practice partner, stands as a notable figure within Northern Ireland's healthcare landscape, spearheading initiatives that significantly impact primary care and innovation. His multifaceted contributions span various domains, showcasing his dedication to advancing healthcare delivery and quality improvement.

At the forefront of his endeavours is the development of in-house IT solutions tailored for primary care settings. Patrick's expertise and ingenuity have been instrumental in crafting innovative booking systems and direct patient feedback mechanisms, particularly crucial during the COVID-19 pandemic. By leveraging technology, he not only enhances operational efficiency within general practice but also fosters patient engagement and satisfaction.

Moreover, Patrick's influence extends to the realm of education and knowledge dissemination. He has played a pivotal role in establishing regional educational platforms, including webinars and websites, designed to empower primary care practitioners. These platforms serve as invaluable hubs for sharing clinical insights, facilitating system learning, and driving quality improvement initiatives, thereby enhancing the overall standard of care across the region.

In addition to his educational endeavours, Patrick serves as a GP representative on a regional GP information platform. This platform endeavours to establish a comprehensive national data set for primary care in Northern Ireland, enabling data-driven decision-making, business intelligence, and research initiatives. His involvement underscores his commitment to fostering innovation and leveraging data analytics to drive meaningful insights and improvements in primary care delivery.

Furthermore, Patrick actively engages in quality improvement networks, seamlessly integrating quality improvement projects into educational platforms. His collaborative approach ensures that practitioners have access to the latest advancements and best practices, ultimately enhancing patient outcomes and healthcare delivery effectiveness.

Although not directly engaged in HSC Industry collaboration, Patrick recognises the potential benefits of such partnerships, particularly in areas like chronic disease monitoring and innovation funding. His advocacy for integrating primary care needs into system-wide innovation efforts underscores the importance of prioritising and supporting initiatives at the frontline of healthcare delivery.

Patrick's notable platform, GPNi.co.uk, stands as a testament to his commitment to education and knowledge sharing. With over 11,000 hours of clinical education delivered in 2023, the platform serves as a cornerstone for clinicians and pharmacists to engage in collaborative learning and share invaluable insights and experiences on a regional level. Through initiatives like GPNi.co.uk, Patrick continues to elevate the standard of care and drive innovation within Northern Ireland's healthcare ecosystem.

## Jonathan Wallace

Jonathan Wallace, a distinguished figure in academia, holds the esteemed position of Professor of Innovation within the engineering faculty, representing one of the largest academic institutions in Northern Ireland. With a keen focus on addressing contemporary challenges, particularly in the realm of AI and digital health, Jonathan collaborates closely with colleagues to pioneer innovative solutions that reshape healthcare delivery and patient outcomes.

At the heart of Jonathan's research agenda lies a dedication to advancing life sciences, particularly in the realm of digital health and well-being. He is deeply engaged in projects aimed at leveraging cutting-edge technologies to revolutionise healthcare practices, with a particular emphasis on improving diagnostic capabilities and reducing waiting times for critical interventions.

Jonathan's notable projects and collaborations underscore his commitment to driving innovation and fostering collaborative partnerships across academia, industry, and healthcare providers. Noteworthy initiatives include the Magic Rehabilitation Service, a collaborative endeavour with the Department of Health aimed at promoting patient-centred care and engagement. Additionally, his leadership in projects such as the Lung Cancer Research Project, funded by UK Research and Innovation, demonstrates his prowess in leading large-scale endeavours that leverage new medical technologies for improved patient outcomes.

Furthermore, Jonathan's contributions extend beyond individual projects, as he actively advocates for open data initiatives and ethical AI systems in healthcare. His emphasis on patient involvement and co-creation of services underscores his commitment to preventive healthcare and patient-centred innovation.

In his senior position within academia, Jonathan serves as a bridge between research and practical healthcare applications, engaging with strategic boards, government departments, and industry partners to drive system-wide innovation efforts. His influence over innovation is further evident in his advocacy for better collaboration between healthcare trusts and the promotion of successful innovations.

Moreover, Jonathan champions a system-wide approach to healthcare innovation, advocating for policy shifts that empower citizens to take responsibility for their own care. By emphasising the importance of collaborative, multi-stakeholder approaches, he seeks to drive meaningful change and improve healthcare outcomes for all. Jonathan Wallace's exemplary leadership and dedication to innovation position him as a key driving force in advancing healthcare innovation in Northern Ireland and beyond.

## Dr. Frances Duffy

Dr. Frances Duffy emerges as a prominent figure in the healthcare landscape, wielding her expertise as a Clinical Psychologist and Clinical Entrepreneur to pioneer innovative solutions aimed at enhancing mental health care for older individuals, particularly those affected by dementia. At the forefront of her endeavours lies the development and implementation of the CLEAR Dementia Care model app, a groundbreaking innovation that offers comprehensive training nationally and regionally.

In addition to her pioneering work in dementia care, Dr. Duffy has spearheaded initiatives such as the Enhanced Delirium Support and Rehabilitation Service, which aims to provide tailored support for patients grappling with delirium. Despite facing challenges such as time constraints, engaging care homes and carers, and a lack of clear innovation pathways, Dr. Duffy remains committed to driving positive change in mental health care for older individuals.

Collaboration lies at the heart of Dr. Duffy's approach to innovation, as evidenced by her partnerships with Ulster University on dementia projects and with Nightingale Analytics for the development of a dementia assessment app. Her efforts have garnered national recognition, with accolades from esteemed institutions such as Ulster University, the Dementia Health Care Network Ireland, and Age NI.

Moreover, Dr. Duffy actively engages with various stakeholder groups within the healthcare ecosystem, advocating for a more collaborative approach to support innovators and streamline the system. Her vision for a united HSC ecosystem underscores the importance of categorisation and robust support mechanisms, particularly for entrepreneurs navigating complex agreements and governance structures.

Dr. Frances Duffy's exemplary work not only showcases the transformative potential of frontline innovation but also underscores the pressing need for streamlined pathways and increased collaboration within the healthcare system. As advocates for a more cohesive and supportive ecosystem, Dr. Duffy's efforts pave the way for improved mental health care outcomes for older individuals, offering hope for a brighter future in dementia care and post-diagnosis support.

## Leveraging Northern Ireland's Innovation Ecosystem

Northern Ireland's Health and Social Care (HSC) system possesses a unique set of strengths that position it as a prime candidate to lead innovation in healthcare. With a relatively stable and sizable population, an integrated health and social care structure, and a wealth of historical data sets, Northern Ireland offers fertile ground for system-wide studies with results applicable to broader populations and markets. A thriving innovation ecosystem already exists, comprising a diverse array of organisations, networks, funding programmes and technological infrastructure supporting the system. Despite these strengths, the absence of a system-wide authoritative governance and leadership structure hampers the system's ability to fully capitalise on available innovative opportunities. Understanding the landscape of innovation capabilities is paramount for stakeholders seeking to leverage these resources effectively.

### 1. Collaborative Networks:

Collaborative networks serve as vital conduits for knowledge exchange, resource sharing, and collective problem-solving. These networks bring together diverse stakeholders, including academia, industry, healthcare providers, and government agencies, fostering synergistic partnerships to address complex challenges and drive impactful innovations.

### 2. Funding and Investment:

A diverse array of public funding initiatives, strategic partnerships, and grants are pivotal in bolstering research and innovation endeavours across the healthcare landscape. These resources play a crucial role in nurturing collaborative ventures, empowering researchers, and catalysing transformative projects. Appendix III presents the depth of knowledge and work external stakeholders have with the main funding and investment bodies in Northern Ireland.

### 3. Technological Infrastructure:

The technological infrastructure supporting healthcare innovation encompasses a range of tools and systems aimed at enhancing the delivery, management, and security of healthcare services. This infrastructure includes healthcare interoperability solutions, facilitating seamless data exchange; cybersecurity solutions, protecting sensitive patient information; and health information systems like Electronic Health Records (EHRs) and Clinical Decision Support Systems (CDSS), which centralise patient data and aid clinical decision-making. Numerous initiatives in Northern Ireland actively support the technological infrastructure.

### 4. Innovation Projects and Initiatives:

Innovation Projects and Initiatives represent the driving force behind transformative change in the research and innovation ecosystem. These initiatives encompass a wide range of efforts, from pilot programs to large-scale projects, aimed at developing and implementing novel solutions to pressing healthcare challenges.

### 5. Research Institutions and Organisations:

Research Institutions and Organisations form the backbone of the healthcare research and innovation landscape, comprising academic institutions, healthcare trusts, and specialised research centres. These entities are dedicated to advancing knowledge, conducting groundbreaking research, and translating discoveries into real-world applications.

### Collaborative Networks

- Health Innovation Research Alliance Northern Ireland (HIRANI)
- Digital Health and Care NI (DHCNI)
- HSC Engagement
- Clinical Translational Research and Innovation Centre (C-TRIC)
- Northern Ireland Connected Health Innovation Centre (CHIC)
- Northern Ireland Clinical Research Network (NICRN)
- NHS Clinical Entrepreneurs Programme

### Funding and Investment

- InvestNI
- NIHR Invention for Innovation (i4i)
- Launchpad
- Techstart Ventures
- Engineering and Physical Sciences Research Council (EPSRC)
- UK Research and Innovation
- PaLS - Procurement and Logistics Service
- Belfast Regional City Deals
- Matrix
- Catalyst

### Technological Infrastructure

- Encompass
- Epic
- Cyber
- Core Laboratory Information Management System (CoreLIMS)
- Evolve programme
- NIPACS+

### Innovation Projects and Initiatives

- Institute of Research Excellence for Advanced Clinical Healthcare (iREACH)
- HSC Innovations
- Local digital initiatives
- Digital Catapult Northern Ireland
- The Innovative Devices Access Pathway (IDAP) - pilot phase

### Research Institutions and Organisations

- University of Ulster
- Queens University Belfast
- Northern Ireland Clinical Research Network (NICRN)
- Health and Social Care R&D Division
- Public Health Agency
- Northern Ireland Biobank

## The Role of Digital in Innovation

Digital technologies and data are central to driving change within a health innovation ecosystem. However, it's essential to acknowledge that innovation encompasses more than just digital solutions. While digital is just one facet of the broader innovation spectrum, it garners significant attention and offers promising solutions. This section delves into the multifaceted role of digital in healthcare innovation, specifically in Northern Ireland, acknowledging how it is leveraged in the Digital Innovation Strategy, facilitated by the creation of the Digital Innovation Hub.

As part of the engagement, internal stakeholders were surveyed to gauge their perspectives on the role of digital within the healthcare innovation landscape. Ranked below are the perceived roles of digital in innovation:

1. **Facilitating collaboration:** The majority of respondents (80%) recognise the role of digital in fostering collaboration among partners within the innovation ecosystem. This indicates a widespread acknowledgment of digital tools and platforms as facilitators for joint projects and initiatives.
2. **Providing data and evidence:** A significant proportion of respondents (73%) acknowledge the importance of digital in providing data and evidence to support decision-making and prioritise innovation efforts. This highlights a recognition of the value of digital technologies in informing strategic planning and prioritisation of innovation.
3. **Improving workflow and diagnostics:** A substantial number of respondents (70%) see digital innovation as crucial for enhancing workflow efficiency and diagnostic capabilities within the healthcare setting. This underscores the perceived benefits of digital solutions in optimising operational processes and enhancing patient care.
4. **Advising on cutting-edge innovation:** Two-thirds of respondents (67%) view digital as a valuable source of advice and guidance on innovative solutions that can address various healthcare challenges, supporting improved population health, workflow, and diagnostics.
5. **Embedding and adopting innovations:** A significant portion of respondents (67%) recognise the role of digital in facilitating the widespread adoption and integration of innovative digital solutions within healthcare systems.
6. **Supporting digital and technical aspects of innovation:** A majority of respondents (63%) acknowledge the role of digital in providing technical support and expertise for innovation initiatives.

Overall, the insights suggest a strong recognition of the multifaceted role that digital plays in driving innovation within healthcare ecosystems. From facilitating collaboration and providing data-driven insights to supporting implementation and technical aspects, digital technologies are seen as integral components of modern healthcare innovation strategies.

Similarly, when external stakeholders were asked a related question, they also ranked "Facilitating collaboration" as the most important role digital plays in the NI ecosystem, highlighting the importance placed on collaborative efforts and partnerships within the ecosystem to drive all innovation forward. Following closely, "Supporting the digital and technical aspects of innovation" underscores the significance of technical expertise and support in enabling successful innovation initiatives. Additionally, the emphasis on "Facilitating the embedding and adoption of digital innovations at scale" signals a focus on scalability and widespread adoption of digital solutions, reflecting a desire for tangible impact and transformation across the healthcare system. These were followed by "Horizon scanning" and "Providing data and evidence" indicating a forward-looking approach, with stakeholders seeking to leverage emerging technologies and empirical evidence to inform innovation efforts and decision-making. Finally, the lowest perceived role of digital was "Implementing digital innovation" which may indicate that external stakeholders perceive challenges or complexities associated with execution, such as resource allocation, change management, or integration with existing systems. Alternatively, it could reflect a recognition that successful implementation relies heavily on prior steps, such as collaboration, technical support, and scalability, which are seen as more foundational to the innovation process.

## The Digital Innovation Hub

The Digital Innovation Hub in Northern Ireland forms part of the HSCNI's Digital Innovation Strategy 2022-2026. It is committed to initiating a change in mindset and culture surrounding digital innovation, while also addressing the challenges the innovation ecosystem experiences (described further in the next chapter of this report). It is designed to facilitate the end-to-end development cycle of healthcare innovation initiatives, from conception to implementation and scaling. This is achieved through a structured approach known as the Innovation Pathway, which consists of three main stages: opportunity identification, testing, and scaling.

### Innovation Pathway Stages:

1. **Build Foundations & Identify Opportunities:** This stage involves determining priorities for digital innovation, engaging stakeholders to identify best practices and pain points, and establishing a repository of best practices.
2. **Incubate, Test & Accelerate:** Shortlisted ideas are further developed into formal use cases, prioritised based on cost-impact analysis, and progressed to proof-of-concept and piloting stages.
3. **Scale, Deploy & Learn:** Successful initiatives are scaled for wider deployment, with a focus on establishing execution plans, setting milestones, and facilitating further solution development.

To operationalise these goals, the Digital Innovation Hub is structured around key functional layers, focusing on governance, assurance, and decision-making, as well as the Innovation Pathway itself. Governance processes will ensure strategic alignment, evaluate innovation projects, and oversee contractual and legal obligations. Collaborative efforts with governmental bodies and industry partners will be facilitated through a digital ecosystem collaboration plan, fostering sustainable relationships and promoting innovation.

Within the Innovation Pathway, emphasis is placed on horizon scanning, leveraging established networks and thematic areas to identify and prioritise opportunities. An innovation repository will provide access to examples of digital innovation, fostering knowledge sharing and collaboration. Prioritisation will focus resources on key priority areas aligned with the broader healthcare vision and strategy, maximising impact within resource constraints.

Delivery functions of the Digital Innovation Hub encompass proof of concept, funding management, scale and deployment, and pilot assessment. An innovation fund will promote a "digital first" culture, while innovation wrap-arounds will provide support for innovators and adopters alike. Continuous improvement will be ingrained in the hub's ethos, with each cycle of innovation informing future endeavours and driving progress in healthcare innovation in Northern Ireland.

## Digital Innovation Resources

**83% of internal stakeholders, and 75% of external stakeholders believe the system does not currently have the resources to support the roles that they believe digital should play in the collaborative innovation ecosystem.**

Internal stakeholders list the following necessary resources that they feel the ecosystems needs to support the digital aspect of innovation:

- **Adequate resourcing:** There's a consensus on the importance of having sufficient resources for data analysis and implementation to maximise the potential of vast data sources. Resource needs extend comprehensive support in terms of people, processes, policies, adequate funding and technological infrastructure.
- **Expertise in data protection:** Stakeholders emphasise the need for expertise in data protection, including creating Data Protection Impact Assessments (DPIAs), ensuring internet/wi-fi coverage, and bolstering cybersecurity measures.
- **Education for staff:** There's a call for ongoing education and training programs to enhance staff skills and competencies in digital technologies.
- **Advisors, champions, and technical experts:** Stakeholders stress the importance of having knowledgeable advisors, champions, and technical experts to guide digital initiatives effectively.

- **Better connectivity and accessibility:** Improved connectivity and accessibility are identified as essential for enabling seamless digital interactions and access to resources.
- **Expertise in business analysis:** Stakeholders highlight the importance of having expertise in business analysis functions to strategically align digital systems and ensure compatibility and integration.
- **Prioritisation and dedicated teams:** There's a call for prioritisation frameworks and dedicated teams focusing on IT, clinical, and research innovation to streamline efforts and ensure focused outcomes.

External stakeholders list the following necessary resources that they feel the ecosystems needs to support the digital aspect of innovation:

- **Engagement events and innovation platforms:** Stakeholders highlight the need for regular engagement events, such as hackathons, accelerators, and bootcamps, to promote rapid innovation and leverage digital resources effectively, acknowledging the competition with the private sector for talent and resources.
- **Administrative and leadership support:** There's a call for increased coordination, administrative support, and dedicated leadership roles, such as a Director of Innovation and Chief Innovation Officer or Innovation Lead, to drive innovation initiatives and facilitate collaboration across stakeholders and disciplines. They also stress the importance of joint leadership between the Department of Health and the Department for the Economy, as well as support at interfaces in innovation, to ensure effective coordination and alignment with strategic goals outlined in reports and strategies.
- **Enhanced connectivity and collaboration:** Stakeholders emphasise the importance of establishing a single front door linked to all ecosystem parts via a portal or regular meetings, facilitating cohesive strategy development, unified funding initiatives, and prioritisation of service development opportunities.
- **Funding and educational support:** There's a consensus on the critical role of funding to allocate time for research and digital innovation, support investment in new ideas, and provide high-quality educational materials tailored to digital innovation approaches.

When inquired about resources that could contribute to the research, innovation, and digital aspects of the ecosystem, the majority of internal stakeholders disagreed; yet of the small number who affirmed, interested staff members and professionals were the prevailing answer to resources offered.

External stakeholders, however, proposed the following contributions:

#### HIRANI

- Able to act as the communication voice across multiple stakeholders, organisations and networks within the ecosystem

#### University of Ulster

- CH:LL Living Lab User Experience (UX and Usability Engineering Lab)
- Access to Centre for Digital Healthcare Technologies and its Resources (CDHT)
- Access to research funding
- Access to equipment
- Access to expertise
- Existing roles who can support the network



**Queens University Belfast**

- Stakeholders with knowledge, expertise, R&D and commercial experience
- Image Reading Centre
- Knowledge of bidirectional translational processes

**InvestNI**

- A range of business support and R&D programmes which can support and fund business engagement with the HSC
- Funding and entrepreneurship

**Innovate Island**

- Innovation ecosystem [map](#)

**Celsio**

- Library of eLearning courses
- Innovation competency and capability assessments
- Online Innovation Management system

**ABPI**

- Support with research

**Cogniss**

- Ability to enable innovators to build compliant digital health technologies, without any need for technical teams

**Trimedika**

- Networks and technical teams

## Conclusion

In conclusion, the Northern Ireland research and innovation ecosystem stands out with areas of excellence evident in its multitude of organisations, initiatives, achievements, and emerging programs. The region's steadfast commitment to problem-solving, innovation, and collaboration is evident through the case studies and profiles of innovation champions presented in this report, and these examples only scratch the surface.

While Northern Ireland's healthcare innovation journey is marked by remarkable progress, challenges around collaboration, implementation and spread have been touched on. The next chapter will delve deeper into these hurdles, exploring barriers, blockers, and the needs of the ecosystem as experienced by the stakeholders in it.

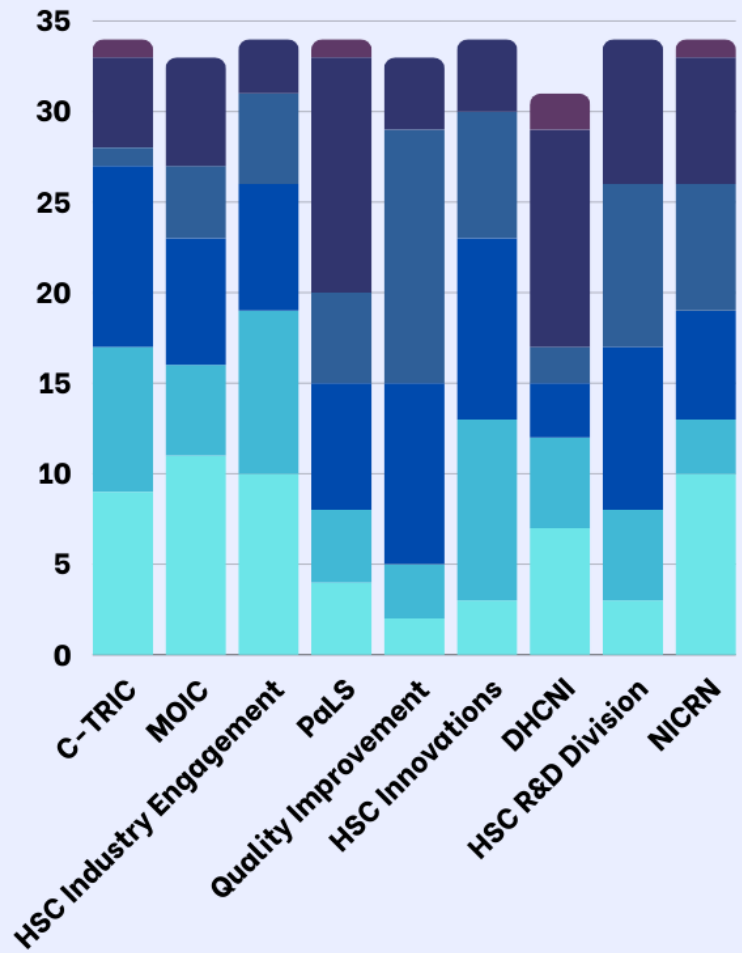
Despite these challenges, Northern Ireland remains poised at the forefront of healthcare innovation. With a collective dedication to overcoming the current challenges, leveraging emerging innovations and technologies, and fostering a culture of innovation, the region is well-positioned to lead the way in shaping the future of healthcare.

## Appendix I: Internal knowledge of innovation groups

**What is your knowledge of the following internal stakeholder groups regarding their role in research and innovation?**

Internal

- Never Heard Of
- Heard Of
- Some Knowledge of
- Worked With
- Works Regularly With
- Signposts To

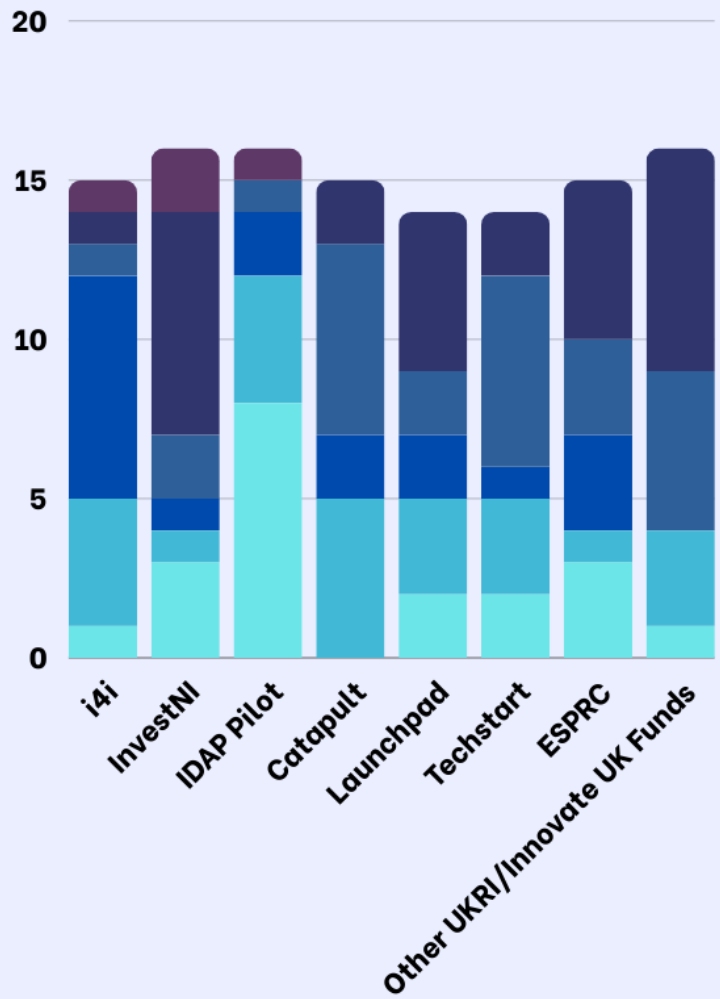


## Appendix II: External knowledge of innovation groups

**What is your knowledge of the following funding or support programmes and initiatives?**

External

- Never Heard Of
- Heard Of
- Some Knowledge of
- Worked With
- Works Regularly With
- Signposts To

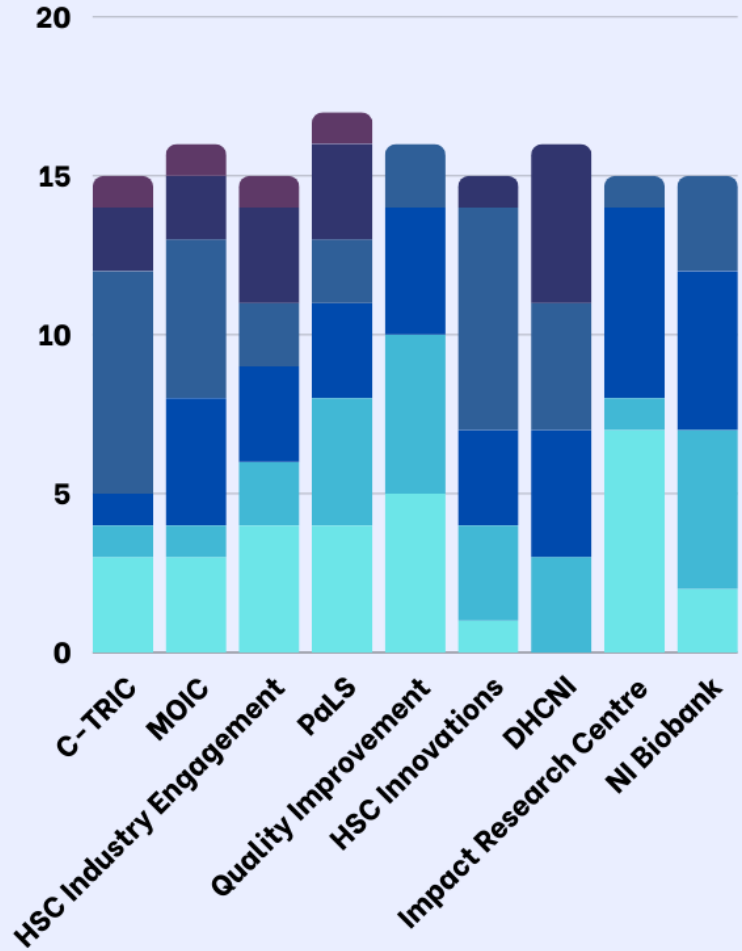


## Appendix III: External stakeholder knowledge of funding support

**What is your knowledge of the following HSCNI centres and initiatives?**

External

- Never Heard Of
- Heard Of
- Some Knowledge of
- Worked With
- Works Regularly With
- Signposts To





# Healthcare Innovation Consortium

*Because innovation is everyone's business, we've made it ours*



## Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Discovery Phase Current Challenges

April 2024

## Introduction

Navigating healthcare innovation in Northern Ireland involves grappling with the paradoxical nature of collaboration: both celebrated as a driver of progress and lamented as a significant obstacle. This exploration delves into the complexities of collaboration, adoption, and scaling within the healthcare landscape, shedding light on contrasting perspectives, structural barriers, and systemic inefficiencies hindering cohesive collaboration across departments, sectors, and stakeholders. By scrutinising both internal and external viewpoints, this analysis aims to unravel the intricacies of collaboration and innovation adoption, highlighting the hurdles that need overcoming to foster seamless collaboration and drive meaningful innovation at scale within Northern Ireland's healthcare ecosystem.

## What is currently working well and needs to be reinforced?

### Stimulating Innovation and Problem Solving

In Northern Ireland, there exists a thriving environment for innovation and collaboration, bolstered by initiatives such as the Medicines Optimisation Innovation Centre (MOIC) and the Connected Health Innovation Centre. These programs not only provide crucial funding but also offer essential support for collaborative projects involving universities, industry partners, and government agencies. Moreover, there is a pervasive culture of collaboration ingrained within the region, demonstrated particularly during the time of the COVID19 pandemic, exemplified by successful endeavors like the Covid Care app, which facilitated broad sector-wide collaboration during the pandemic. The problem-solving ethos inherent among the people of Northern Ireland further amplifies this collaborative spirit, underlining the significance of comprehending health challenges and priorities to effectively drive innovation forward.

Central to this environment is a culture of collaboration and problem-solving deeply embedded within the ecosystem. Stakeholders recognise and embrace this collaborative ethos, noting its pivotal role in fostering innovation and driving progress. As one participant aptly remarked, "A culture of collaboration is encouraged and fostered, and people are very willing to work together within the ecosystem." This sentiment underscores the importance of collective efforts in addressing complex healthcare challenges and driving meaningful innovation initiatives forward. Furthermore, stakeholders point to several successful innovation projects and initiatives that have left a positive imprint on the healthcare landscape in Northern Ireland. For instance, the widespread rollout of a digital app for chronic pain management across all Trusts, spearheaded by the Public Health Agency, stands as a testament to the region's capacity for impactful innovation. Similarly, initiatives such as Patient Flow, initially implemented in the Southeastern Trust but subsequently expanded to other regions, highlight the tangible benefits derived from collaborative innovation efforts.

### Cross-Departmental Collaboration and Knowledge Sharing

Acknowledging both the potential and the challenges surrounding collaboration, Cross-Departmental Collaboration and Knowledge Sharing stand out as essential drivers of innovation within Northern Ireland's healthcare landscape. While previous discussions highlighted impediments to collaboration, such as fragmentation and insularity, initiatives like cross-departmental working groups signal a proactive approach to addressing these barriers and fostering collaboration across different sectors. Despite existing challenges, stakeholders recognise the importance of collaborative efforts and are actively engaged in initiatives aimed at bridging departmental divides and promoting cross-sectoral collaboration.

Efforts such as the collaboration between the Department of Health and the Department of Economy on life sciences innovation exemplify a concerted push towards greater collaboration and knowledge exchange. Regular meetings facilitated by individuals like Ian Young, which bring together organisations such as HIRANI and the HSC Industry Engagement unit, underscore the recognition of potential synergies and the commitment to overcoming barriers to collaboration.

Moreover, while acknowledging the need for improvement, stakeholders emphasise the positive impact of collaborative networks and knowledge-sharing initiatives within the healthcare system. Despite past challenges, stakeholders are optimistic about the potential of collaborative endeavours to drive positive change and innovation. Initiatives like HIRANI

serve as critical catalysts in fostering collaboration, bringing together key decision-makers from both the NIHSC and industry. Through these collaborative efforts, stakeholders are working towards a more cohesive and innovative healthcare ecosystem in Northern Ireland, aiming to overcome past barriers and unlock the full potential of cross-departmental collaboration.

## What is currently hindering the system?

### Understanding Roles and Streamlining Collaboration:

Addressing the underlying challenges hindering innovation and improvement within the healthcare ecosystem in Northern Ireland requires a comprehensive understanding of various factors impeding progress. One significant challenge highlighted is the lack of role understanding and overlaps, which leads to inefficiencies and duplicated efforts. Stakeholders express difficulty in understanding individual roles within the system, citing confusion and redundancy caused by similar roles between different entities. This impacts collaboration and contributes to inefficiencies, underscoring the need for clearer delineation of roles and responsibilities to avoid duplication of efforts and streamline collaboration across entities.

### Ensuring Long-Term Sustainability

Another critical concern is the issue of funding and long-term sustainability. Short-term funding for innovation initiatives poses challenges for long-term planning and sustainability, hindering strategic investment in innovation. Lack of clarity on funding allocation further compounds this challenge, impacting long-term sustainability efforts. Stakeholders stress the importance of addressing these funding challenges to ensure the continuity of innovation efforts and long-term impact on patient outcomes.

### Culture and Perception of Innovation

Cultural barriers and attitude shift emerge as significant obstacles to innovation and improvement within the healthcare system. Resistance to change and a perception that innovation is an added burden rather than a necessity hinder progress. Stakeholders emphasise the need for a cultural shift towards long-term investment in innovation and a paradigm change in how innovation is perceived and integrated. Additionally, there is a call for a comprehensive approach to problem definition and solution justification to ensure successful implementation and outcomes. Stakeholders stress the importance of focusing on meaningful benefits and outcomes rather than mere activity, highlighting the need for innovation efforts to be aligned with desired outcomes and impacts to drive meaningful change within the healthcare ecosystem.

### Clarity of Roles and Streamlining Hand-offs

These challenges intersect with the need for clarity of roles and hand-offs within the system. Inadequate hand-offs between stakeholders lead to disjointed efforts and fragmented initiatives, further complicating the innovation landscape. Addressing these multifaceted challenges requires a coordinated effort involving various stakeholders, including policymakers, healthcare professionals, and industry partners. By fostering a culture of collaboration, promoting clarity of roles and responsibilities, and ensuring long-term sustainability of funding, Northern Ireland can overcome these barriers and drive meaningful innovation and improvement within its healthcare ecosystem.

## Challenges to collaboration

### Internal Perceptions

Whilst examining internal perceptions of collaboration within the Northern Ireland healthcare system, several key challenges and barriers have been identified by stakeholders, each posing significant hurdles to effective collaboration

and innovation. These challenges are outlined across various domains, starting with the issue of unclear priorities, where a lack of clarity on healthcare system priorities and resource allocation inhibits strategic decision-making. Additionally, inertia and underutilised resources hinder ecosystem connectivity, while siloed working practices contribute to fragmentation and duplication of efforts. Internal collaboration faces its own set of challenges, including limited engagement with external innovators and insufficient signposting of innovators within the system. Resource constraints further compound these challenges, with a lack of necessary skills and funding. Communication and engagement barriers, along with cultural and operational challenges, add layers of complexity to the collaboration landscape, highlighting the need for comprehensive strategies to address these multifaceted issues and foster a more collaborative and innovative healthcare ecosystem in Northern Ireland.

#### 1. **Unclear Priorities:**

- *Lack of clarity on healthcare system priorities:*
  - Almost one-third of the participants (29%) expressed uncertainty regarding the priorities of the HSC. This lack of clarity could hinder strategic decision-making and resource allocation within the healthcare system.
- *Unclear resource allocation for policy priorities:*
  - The majority (57%) agreed that resources for delivering policy priorities are not clearly identified. This ambiguity in resource allocation could lead to inefficiencies and misalignment with strategic objectives.
- *Misalignment of incentives and funding for innovation:*
  - The majority (68%) agreed that incentives and funding for adoption and scale do not align. This misalignment may discourage innovation efforts and hinder the implementation of impactful solutions.

#### 2. **Inertia and Underutilised Resources:**

- *Inaction and inertia hindering ecosystem connectivity:*
  - Participants identified inaction and inertia as significant barriers to creating a more connected ecosystem. Despite the availability of resources, the lack of proactive initiatives may impede collaboration and innovation.
  - "The biggest barrier to creating a more connected ecosystem is inaction."
  - "The DHCNI Digital Strategy is clear in terms of priorities, but not much action has taken place to push these priorities forward."
- *Available funding not utilised effectively for collaboration:*
  - Despite the availability of funding, it remains underutilised for fostering collaboration within the health ecosystem. This underutilisation suggests a need for more strategic investment and utilisation of available resources.
  - "In reality, money has been available in the short and long term to facilitate the innovation ecosystem however this has not been used for this purpose."

#### 3. **Siloed Working:**

- *Fragmentation and duplication of efforts:*
  - Despite existing elements for collaboration, there is a lack of a cohesive approach to bring stakeholders together. This fragmentation leads to duplication of efforts and inefficiencies within the health ecosystem.
  - "While all the necessary elements for collaboration exist, there is a need for a cohesive approach to bring stakeholders together without duplicating efforts."
- *Lack of understanding of roles and activities across the system:*
  - Participants expressed a lack of understanding of roles and activities across the system, indicating a need for improved communication and coordination to avoid redundancies and gaps in efforts.
  - "There is a lack of understanding of what different people are doing and what their roles are."

#### 4. **Internal Collaboration Challenges:**

- *Limited engagement with external innovators:*



- Despite the potential benefits of collaborating with external innovators, nearly half of the participants (46%) indicated that they do not currently work with innovators external to the HSCNI. This suggests a significant gap in leveraging external expertise and resources.
- *Insufficient signposting of innovators within the system:*
  - Nearly half of the participants (45%) reported that they do not signpost innovators to other parts of the system, whether internal or external. This lack of navigation assistance within the system could lead to missed opportunities for collaboration and innovation.
- *Low awareness of key organisations facilitating collaboration:*
  - Approximately 30% of internal participants have never heard of key organisations such as NICRN or HSC Industry Engagement. This lack of awareness suggests a need for improved communication and promotion of existing collaboration facilitators within the health ecosystem.

#### 5. Resource Constraints:

- *Lack of necessary skills for effective collaboration:*
  - Participants highlighted a lack of skills needed for effective collaboration, particularly in harnessing energy from clinicians who are also innovators. This skill gap may hinder the successful execution of collaborative initiatives.
  - "Lack of skills needed to do this collaboration; at the moment we are harnessing energy from clinicians who so happen to be innovators."
- *Difficulty engaging clinical leads due to financial constraints:*
  - Financial constraints pose challenges in engaging clinical leads, potentially limiting their involvement in collaborative efforts. Identifying suitable personnel and allocating sufficient resources are critical for overcoming this barrier.
- *Insufficient resources for digital aspects of collaboration:*
  - The majority of internal participants (80%) expressed concerns about insufficient resources to support digital aspects of collaboration.

#### 6. Communication and Engagement Barriers:

- *Siloed approach hindering effective communication:*
  - Siloed thinking and approaches hinder effective communication and collaboration across the health ecosystem. Breaking down silos and promoting synergistic efforts are essential for overcoming communication barriers.
- *Complex networks and varying needs across jurisdictions:*
  - The complexity of networks and varying needs across jurisdictions pose challenges in collaboration and coordination efforts. Understanding and addressing these differences are vital for fostering effective engagement and collaboration.
  - "...different jurisdictions, different cultures, with varying needs."

#### 7. Cultural and Operational Challenges:

- *Perception of inadequacy and fatigue across the healthcare system:*
  - A pervasive culture of feeling inadequate or not up to speed exists within the healthcare system, despite the presence of ambition and potential at higher levels. This perception may hinder confidence and morale among stakeholders.
  - "There is an overall pervasive culture of feeling like Northern Ireland isn't good enough."
- *Unclear ownership and responsibility for clinical trials and health technology:*
  - Ambiguity regarding ownership and responsibility for clinical trials and health technology presents challenges in decision-making and implementation. Clarifying roles and responsibilities is crucial for effective collaboration and innovation.
  - "Lack of clarity regarding ownership and responsibility within the healthcare system, particularly concerning clinical trials for pharmaceuticals versus health technology."

## External perceptions:

In examining external stakeholder feedback on collaboration within the Northern Ireland healthcare system, several key challenges emerge. At the forefront is the issue of unclear priorities, where stakeholders express difficulties in understanding healthcare system priorities and the digital strategy, citing a lack of communication and clarity. Siloed approaches and a lack of collaboration within the system compound these challenges, with stakeholders noting fragmentation, insularity, and a need for better engagement between universities, Trusts, and external organisations. Resource constraints, including capacity limitations and personnel turnover, further impede progress. A perceived lack of structure and direction, internal competition, and complex networks compound these challenges. Issues with implementation strategies, engagement, and the procurement process highlight systemic inefficiencies requiring reform for more effective collaboration.

### 1. Unclear Priorities:

- *Challenges in Understanding Priorities:*

- External stakeholders expressed difficulties in understanding and keeping up with healthcare system priorities, as well as a lack of communication and clarity in the digital strategy.
- "Unless you work directly in HSC, it is difficult to know exactly what their priorities and challenges are."

### 2. Siloed Approach & Lack of Collaboration:

- *Fragmentation and Insularity:*

- Criticism of the lack of cohesion and innovation infrastructure within the HSC, as well as the perception of insularity and a lack of a front door for decision-makers and new entrants.
- "There are pockets of excellence but a lot of silos particularly within the HSC."
- "The way the Trust system works means that there is easily overlap between groups and projects."

- *Need for Collaboration and Engagement:*

- Stakeholders expressed a need for better collaboration and engagement between universities, Trusts, and external organisations.
- "Industry are not engaging with the Trusts in need of help."

### 3. Resource Constraints:

- *Capacity and Time Constraints:*

- External stakeholders highlighted a lack of capacity to dedicate time to innovation within the overwhelmed healthcare system. There's a need for creating time and space for innovation pathways to progress, which may take 1-2 years.
- "A big part of the problem is there isn't currently the capacity to give time to innovation."
- "Unless space is created for innovation, and for innovation pathways to be created, it will not progress."

- *Loss of Key Personnel and Digital Literacy:*

- The departure of key personnel, such as the data lead from HSC, has been noted as a setback. Additionally, while there's a focus on upskilling companies in digital literacy in Northern Ireland, it's not reflected specifically within the healthcare system.

### 4. Lack of Structure & Direction:

- *Perceived Lack of Structure and Direction:*

- Stakeholders noted a lack of structure, direction, and clear action plans within the healthcare system. They highlighted the absence of infrastructure like AHSN in NI and praised the collaborative culture in England.
- Multiple participants suggested that the system lacks structure and/or direction.
- Multiple participants praised the system in England (AHSN).

### 5. Internal Competition:

- *Acknowledgment of Internal Competition:*

- Stakeholders recognise the presence of internal competition due to the scale of operations.
- "Because of our scale, there is too much competition that we need to acknowledge."

## 6. Complex Networks and Overlaps:

- *Identification of Overlaps and Synergies:*
  - 43% of participants think there is overlap between the major groups/programs in the system.

## 7. Lift and Shift Approach and Fear of Engagement:

- *Concerns with Implementation Strategies and Engagement:*
  - Stakeholders criticised the lift and shift approach in implementing initiatives like Encompass across Trusts without adequate research. There's also fear and reluctance to engage with the private sector due to perceived profit-driven motives and regulatory concerns.

## 8. Procurement Process and Engagement:

- *Challenges in Procurement and Engagement:*
  - Participants highlighted issues with the current procurement process, including its length, and reported unsuccessful engagements with HSCNI in the past.
  - 29% of participants had unsuccessfully engaged with HSCNI in the past.

## Overlap between internal and external stakeholders the perceived challenges and blockers:

In examining feedback from both internal and external stakeholders within the Northern Ireland healthcare system, several common themes emerge, reflecting shared challenges and concerns. Strategic clarity and direction represent a significant issue for both groups, with difficulties in understanding priorities and a lack of clear communication hindering strategic decision-making. Collaboration and coordination are also highlighted as critical areas for improvement, with stakeholders from both sides criticising fragmentation and insularity within the system. Resource constraints and procurement challenges are identified as significant barriers to innovation and collaboration, impacting capacity, skills, and funding utilisation. Additionally, concerns regarding engagement and a fear of change are shared, emphasising the need for more strategic and research-based approaches to innovation implementation. Addressing these common themes is essential for fostering a more collaborative and innovative healthcare ecosystem in Northern Ireland.

### 1. Strategic Clarity and Direction:

- Both internal and external stakeholders express challenges in understanding the healthcare system's priorities, hindering strategic decision-making.
- There is a perceived lack of clear direction, action plans, and communication regarding policy priorities and resource allocation.

### 2. Collaboration and Coordination:

- Stakeholders from both groups criticise the fragmentation and insularity within the healthcare system, highlighting a lack of cohesion and collaboration infrastructure.
- Complex networks, overlaps, and internal competition hinder effective collaboration and coordination efforts across organisations.

### 3. Resource Constraints and Procurement Challenges:

- Internal and external stakeholders identify resource constraints and lengthy procurement processes as significant barriers to innovation and collaboration.
- Challenges related to capacity, time, skills, and underutilisation of available funding inhibit innovation efforts within the healthcare system.

### 4. Engagement and Fear of Change:

- Concerns regarding the lift and shift approach in implementing initiatives and a reluctance to engage with the private sector are shared by both groups.
- Stakeholders emphasise the need for more strategic, research-based approaches to innovation implementation and engagement.

## Challenges to scale and adoption

### Internal perceptions:

In examining internal stakeholder perspectives on challenges to innovation scale and adoption in Northern Ireland's healthcare landscape, several key themes emerge. Firstly, the absence of a clear agenda and joint ministerial buy-in complicates collaboration with external partners and hampers innovation utilisation within the system. Financial, resource, and time constraints, coupled with lower health expenditure compared to England, limit resources available for innovation endeavours and impede effective implementation and scaling efforts. Additionally, while digital innovation receives significant attention, there's limited awareness of non-digital innovation, necessitating a broader understanding to support collaboration and resource allocation. Cultural concerns about job displacement further complicate adoption, while poor processes, lack of structure, and governance issues pose additional barriers.

#### 1. **Lack of Clear Agenda and Joint Ministerial Buy-In:**

- Absence of a clear, agreed-upon agenda between the health and economy sectors, compounded by the lack of joint ministerial buy-in, poses a significant barrier.
- "It's currently very hard to use innovations within the system, and it's very difficult for external partners like academia and innovators to work inside the health and social care system within Northern Ireland."
- "Unfortunately, nothing works effectively at the moment. The lack of government, lack of directions, lack of people in decision making posts coupled with incredible pressure and overwork of clinical academics prevents effective working."

#### 2. **Financial, Resource and Time Constraints:**

- Northern Ireland allocates significantly less of the funding that England dedicates to health, creating financial constraints that impede innovation initiatives.
- "Northern Ireland's health expenditure is approximately half, limiting resources available for innovation endeavours."
- Key challenges include resource constraints and time limitations, which hinder effective implementation and scaling of innovations.
- Stakeholders emphasised the need for adequate resourcing, funding, and streamlined services to support the digital aspects of the ecosystem.
- "We need more funding, more streamlined services, and more accountability in terms of the use of public funds."

#### 3. **Limited Awareness of Non-Digital Innovation:**

- While there is significant expertise in digital innovation, there is a lack of awareness about other forms of innovation, highlighting the need to broaden perspectives and recognise diverse innovation activities.
- "A comprehensive understanding of innovation efforts, encompassing both digital and non-digital initiatives such as clinical trials, is necessary for effective collaboration and resource allocation."

#### 4. **Cultural Issues:**

- Cultural issues, such as the perception that digital innovation may take away jobs, further complicate adoption efforts.

#### 5. **Process Improvement and Governance:**

- Participants highlighted poor processes, lack of structured approaches, and governance issues as barriers to effective innovation adoption and scale.
- Lack of infrastructure, outdated IP policies, and disincentives due to Trust policies and governance hinder the pathway for innovation adoption and scale.
- Common answers to current blockers of adoption and scale included "Governance and accountability," and "Poor processes."

## External perceptions:

External stakeholders in Northern Ireland's healthcare ecosystem highlight significant challenges to innovation adoption and scale. Regulatory barriers, including diverging UK-EU regulations and difficulties accessing clinical data, hinder progress. The lack of integration and coordination among innovative infrastructure elements leads to systemic inefficiencies. Funding constraints and a risk-averse procurement environment impede innovation efforts. Stakeholders perceive a lack of HSC investment in external service providers' outcomes, potentially driving innovators elsewhere. Scaling early-stage companies faces challenges, risking relocation to other regions. Mixed views on HSC priorities underscore the need for clarity to enhance innovation efficiency and collaboration.

### 1. Regulatory Barriers:

- External stakeholders cite regulatory barriers as a significant impediment to innovation adoption and scale in Northern Ireland.
- "Looking to UK government for regulatory environment and as this diverges from the EU this is difficult as NI remain aligned to the EU."
- "Regulatory barriers also include difficulties in accessing clinical data. There is no secondary use of data legislation."

### 2. Lack of Integration and Coordination:

- Stakeholders highlight the lack of integration and coordination among various innovative infrastructure elements, leading to isolated operations.
- "There is an absence of a systemic approach to innovation, as it is not considered core business in Trusts."

### 3. Funding Constraints:

- Multiple participants identify lack of funding or access to funding as a significant challenge, hindering innovation initiatives.

### 4. Risk-Averse Environment:

- Stakeholders express concerns about the risk-averse and conservative commissioning and procurement environment in Northern Ireland.

### 5. Absence of HSC Investment:

- Stakeholders perceive a lack of investment by the HSC in outcomes for external companies providing services.
- "The HSC isn't invested in the outcome for external companies providing services."

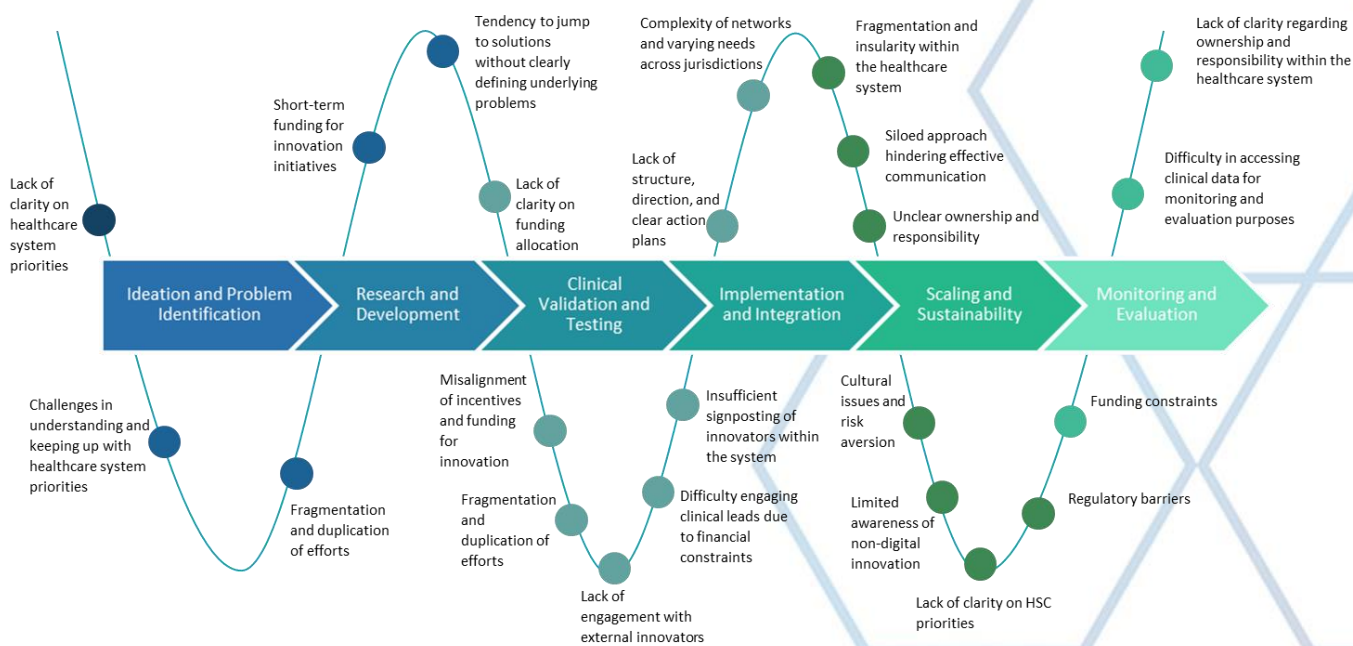
### 6. Scalability Challenges:

- External stakeholders note the difficulty in scaling early-stage companies, ideas, and spinouts from universities within Northern Ireland, leading to potential relocation to other regions.
- Quote: "There are currently good early-stage companies, ideas and spin outs from universities, however there is a lack of access at scaling them in NI – so they then take their service / product to USA as it's easier."

### 7. Lack of Clarity on HSC Priorities:

- Stakeholders express mixed views on the clarity of HSC priorities, indicating a need for better understanding to improve the efficiency of the innovation process.
- "Unless you work directly in HSC, it is difficult to know exactly what their priorities and challenges are".
- "Whatever policy is there; it will change in the next 6 months so not much point keeping up with them."

## Barriers to Innovation



In the ideation stage of innovation within the Northern Ireland healthcare landscape, stakeholders encounter challenges that influence the generation and conceptualisation of innovative ideas. One notable challenge is the lack of clarity on healthcare system priorities, as highlighted by nearly one-third of participants expressing uncertainty regarding the priorities of the Health and Social Care (HSC) system. This ambiguity hampers the ideation process by impeding stakeholders' ability to align their innovation efforts with strategic objectives and areas of greatest need.

Moving to the research and development stage, challenges persist that impact the design and refinement of innovative solutions. One such challenge is the fragmentation and duplication of efforts within the healthcare ecosystem, as stakeholders note a lack of a cohesive approach to bring stakeholders together. This fragmentation not only leads to inefficiencies but also complicates the development process by creating redundancies and gaps in efforts.

As innovation progresses to the clinical validation and testing phase, misalignment of incentives and funding poses a significant barrier. Additionally, limited engagement with external innovators presents a barrier to solution development, with nearly half of the participants indicating that they do not currently work with innovators external to the HSCNI. This lack of external collaboration deprives stakeholders of valuable expertise and resources, hindering the development of innovative solutions tailored to address complex healthcare challenges.

Transitioning to the implementation stage, challenges emerge that impact the deployment and integration of innovative solutions into the healthcare system. One significant challenge is the resistance to change and the perception that innovation is an added burden, rather than a necessity for improvement. This cultural barrier inhibits the adoption of innovative solutions by fostering scepticism and reluctance among stakeholders. Moreover, inadequate hand-offs between stakeholders impede the implementation process, leading to disjointed efforts and fragmented initiatives. Addressing these challenges requires a concerted effort to foster a culture of innovation and collaboration, as well as to establish clear processes and communication channels to facilitate seamless transitions between stakeholders.

Finally, in the evaluation stage, challenges arise that affect the assessment of the effectiveness and impact of innovative solutions. One notable challenge is the lack of comprehensive data and evaluation mechanisms, which hinders stakeholders' ability to accurately measure the outcomes and benefits of innovations. Without robust evaluation frameworks and metrics, it becomes challenging to assess the return on investment and make informed decisions about the adoption and scaling of innovative solutions. Additionally, cultural barriers and resistance to change can impede the evaluation process, as stakeholders may be reluctant to embrace new methodologies or metrics for assessing innovation outcomes. Overcoming these challenges requires the development of clear evaluation frameworks, standardised metrics, and a culture of transparency and collaboration among stakeholders to leverage data-driven insights for driving continuous improvement and innovation in patient care within the Northern Ireland healthcare landscape.

The stakeholder engagement feedback does suggest that the early stages of innovation within the Northern Ireland healthcare landscape are generally functioning well, with many stakeholders highlighting successful collaboration and innovation initiatives. For instance, there is mention of thriving environments for innovation and collaboration, exemplified by initiatives like the Medicines Optimisation Innovation Centre (MOIC) and the Connected Health Innovation Centre. These programs not only provide crucial funding but also offer essential support for collaborative projects involving universities, industry partners, and government agencies. Additionally, the presence of a pervasive culture of collaboration and problem-solving within the region is underscored, with stakeholders recognising and embracing this collaborative ethos as pivotal in fostering innovation and driving progress.

As represented in the diagram above however, more challenges start to emerge as stakeholders progress along the innovation pathway, following research and development. Resistance to change, inadequate hand-offs between stakeholders, and a lack of comprehensive data and evaluation mechanisms hinder the effective deployment, integration, and assessment of innovative solutions. These challenges suggest that while the early stages of innovation may be functioning well, there are significant barriers to be addressed as stakeholders move further along the innovation pathway.

## What works well in other regions?

In exploring strategies for innovation adoption and scale within healthcare systems, it's imperative to consider what works well in other regions. External stakeholders were asked to provide their experiences and feedback of working in regions outside of Northern Ireland, highlighting any valuable insights and potential models for emulation. In England, for instance, a robust ecosystem of regional support organisations exists to assist MedTech innovators, offering consultancy services that facilitate access to decision-makers in NHS England trusts and provide guidance through regulatory pathways. Meanwhile, the Republic of Ireland employs a structured Living Labs approach, featuring a four-step process with dedicated resources and teams for reviewing and implementing innovations. This approach allows companies to thoroughly evaluate and demonstrate the impact of their solutions within the Health Service. Additionally, cultural acceptance and international partnerships play pivotal roles in fostering innovation, as seen in England's greater openness to diverse governance cultures and collaborations, alongside a lower risk aversion compared to Northern Ireland. Furthermore, practices such as emphasising transparency in processes, decision-making, and funding streams, coupled with regular communication, contribute significantly to collaboration and stakeholder engagement in various regions. Lastly, the accessibility of funding and clinician engagement, notably easier payment mechanisms for clinicians to participate in projects, underscores the importance of financial support and stakeholder involvement in driving successful innovation initiatives.

### 1. Ecosystem of Regional Support Organisations and Consultancy Services:

- In England, there exists an ecosystem of regional support organisations for MedTech innovators. Paid consultancy services facilitate access to decision makers in NHS England trusts and provide guidance through clinical trial design and regulatory pathways.
- "One example is in England, where there is an ecosystem of regional support organisations for MedTech innovators, as well as the option of (paid for) consultancy who can facilitate access to decision makers in NHS England trusts..."

### 2. Living Labs Approach in Republic of Ireland:

- Republic of Ireland employs a Living Labs approach to introducing innovation, featuring a structured four-step process with clearly identified resources and teams for reviewing and implementing innovations. This approach allows companies to evaluate and prove the impact of their innovations on the Health Service.

### 3. Cultural Acceptance and International Partnerships:

- In England, there is a greater cultural acceptance of other governance cultures, willingness to accept failures, and a lower risk aversion compared to Northern Ireland. International partnerships contribute to knowledge exchange and innovation.

- "I worked in England for 16 years before NI. They were more used to other cultures, were willing to accept that something did not go well and were much less risk averse."
4. **Transparency and Regular Communication:**
    - Other regions emphasise transparency in processes, decision-making, timelines, and funding streams. Regular communication fosters collaboration and keeps stakeholders informed.
  5. **Accessibility of Funding and Clinician Engagement:**
    - Funding is reported to be more readily accessible in other regions. Some regions allow easier payment for clinicians to work on projects.
    - "We were able to pay for clinicians to work on projects relatively easily."

## Conclusion

Collaboration is often touted as a cornerstone of effective problem-solving and innovation within any system, including healthcare. In Northern Ireland, stakeholders recognise the value of collaboration in generating ideas, sharing expertise, and pooling resources to tackle complex healthcare challenges. However, despite this recognition, several factors contribute to collaboration becoming a double-edged sword, simultaneously celebrated and criticised within the healthcare ecosystem.

Firstly, while collaboration is acknowledged as a strength, there are notable barriers hindering its effectiveness. These barriers include unclear priorities, inertia, and underutilised resources, as well as siloed working practices and internal collaboration challenges. For instance, stakeholders express difficulties in understanding individual roles, leading to inefficiencies and duplicated efforts. Moreover, despite existing elements for collaboration, fragmentation and a lack of a cohesive approach inhibit stakeholders from effectively working together. Additionally, limited engagement with external innovators and insufficient signposting of innovators within the system further impede collaboration efforts. Secondly, the complexity of the healthcare landscape exacerbates these challenges. External stakeholders, such as industry partners and academia, cite regulatory barriers, lack of integration and coordination, and funding constraints as significant obstacles to collaboration and innovation adoption. Moreover, cultural issues, such as risk aversion and perceived inadequacy, create additional hurdles to effective collaboration and innovation adoption within the healthcare system.

Therefore, while collaboration is recognised as a strength, its full potential is often hindered by structural, cultural, and operational barriers within the healthcare ecosystem. Addressing these barriers requires a concerted effort from all stakeholders, including policymakers, healthcare professionals, industry partners, and academia, to foster a culture of collaboration, streamline processes, and overcome systemic challenges. By doing so, Northern Ireland can leverage the power of collaboration to drive meaningful innovation and improve healthcare outcomes for its population.

In conclusion, navigating the landscape of healthcare innovation in Northern Ireland presents a paradoxical journey marked by both promising collaboration and formidable obstacles. As illuminated through this exploration, stakeholders grapple with multifaceted challenges spanning strategic ambiguity, resource constraints, and cultural barriers, hindering seamless collaboration and innovation adoption within the healthcare ecosystem.

Despite these hurdles, there exist commendable initiatives and a resilient culture of collaboration and problem-solving, exemplified by programs like the Medicines Optimisation Innovation Centre and successful ventures demonstrated during the COVID19 pandemic. However, as stakeholders progress along the innovation pathway, challenges intensify, necessitating a concerted effort to address issues of funding sustainability, role clarity, and cultural perception of innovation.

Drawing insights from experiences in other regions, particularly England and the Republic of Ireland, provides valuable lessons and potential models for emulation. From structured Living Labs approaches to a robust ecosystem of regional



support organisations, these examples underscore the importance of transparent processes, clinician engagement, and cultural acceptance in driving successful innovation initiatives.

As Northern Ireland strives to foster a more collaborative and innovative healthcare ecosystem, addressing the identified challenges and leveraging proven strategies from other regions will be paramount. By fostering a culture of collaboration, clarifying roles, ensuring long-term funding sustainability, and embracing innovative practices, Northern Ireland can navigate its healthcare innovation landscape with greater efficacy, driving positive change and improving patient outcomes.



# Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Discovery & Proposed Design Key Steps to Success

April 2024

## Introduction

Looking to the future of healthcare innovation in Northern Ireland, it's crucial to reflect on progress and chart a course aligned with the vision for transformative change. This chapter draws upon insights from our analysis of the current landscape and stakeholder feedback to outline strategic pathways for advancing innovation and research.

Northern Ireland boasts a robust foundation for innovation yet faces challenges such as fragmented governance and resource limitations that it must seek to overcome if it is going to foster a more effective research and innovation culture within its healthcare system. By leveraging strengths, fostering collaboration, and investing in capacity-building, the region's full potential can be unlocked.

## Rationale for an innovation pathway

For a number of reasons, the HSC should be ideally placed to be at the leading edge of innovation. It is already observed there are many significant strengths including:

- A relatively stable population which is of a large enough size to warrant system-wide studies, with results potentially replicable to other populations and markets.
- An integrated health & social care policy and delivery structure including the development of a NI-wide Integrated Care System.
- A wealth of historical, linkable data sets.
- A newly established digital EPR system using Epic, enriched by the roll out of [Encompass](#) last year.
- Relatively close organisational proximity between the formulation of policy and the delivery of services to patients and clients.
- Ambitious digital strategies, underpinned by strong governance processes, which include the deployment of a system-wide, integrated health & care Electronic Patient Record; a digital innovation strategy which aims to develop a digital innovation hub; and a data strategy which will progress the creation of a data institute - significantly enhancing capability to analyse & derive insight from data.
- A well-developed system of R&D in health and care with a significant number of component organisations, programmes, collaborations and partners.
- A well-established approach to embedding innovation within policy development and service delivery through the Medicines Optimisation and Innovation Centre (MOIC), modelled on the Academic Health Science Network (AHSN) concept now known as Health Innovation Network.
- A well-developed Quality Improvement infrastructure with dedicated and trained resources in each of the HSC Trusts.
- The development of an Innovation and Market Development Unit within the Procurement and Logistics Service.
- A number of innovation 'nodes' including the Clinical Translational Research and Innovation Centre (C-TRIC) and the Connected Health Innovation Centre (CHIC).
- Significant capital development via the NI City and Growth Deals.
- Established processes for timely access within the HSC to new innovative medicines with an evidence base for efficacy and cost-effectiveness.

Missing from the above however and posing a challenge to fully leverage the available opportunities, is the absence of a comprehensive system-wide governance and leadership framework to support the coordination and implementation of innovation. Such a framework would unite leaders from various sectors to foster and sustain a culture of innovation and collaboration. With suitable linkages to industry and academia, this structure could effectively coordinate the efforts aimed at translating and implementing scaled outcomes across the Health and Social Care (HSC) system. This coordination would ensure alignment with policy objectives, funding priorities, procurement processes, and the allocation of clinical and managerial resources necessary to drive effective change management.

## Stakeholder Feedback

### Internal Stakeholders

Based on the feedback from internal stakeholders, several key themes emerge regarding suggestions for more successful collaboration, and the development of an effective innovation ecosystem in Northern Ireland.

1. **Need for AHSN-style Model:** There is a prevailing sentiment among stakeholders regarding the potential benefits of transitioning towards an Academic Health Science Network (AHSN)-style model. This shift, although acknowledged as challenging, is perceived as essential for bolstering collaboration and aligning efforts towards common objectives. As one stakeholder expresses, "Having a united AHSN-style model in NI would put us in a much stronger position to collaborate effectively."
2. **Balancing Innovation Principles and Addressing the Economy-Health Gap:** Stakeholders have emphasised the importance of ensuring that innovations yield tangible benefits for the health and care service and its end users, foster collaboration, and deliver improved health outcomes and economic value. There is a recognition that in the context of Northern Ireland, economic benefit may be a byproduct of improved health outcomes, rather than a primary goal.
3. **Establishment of Recognisable Innovation Framework:** Stakeholders highlight the necessity for a well-defined program for innovation, accompanied by a clear vision statement and robust infrastructure for implementation. A suggested innovation Pathway has been well received with one participant outlining how NI could have a visual representation of an "arc of innovation" delineating the journey from conceptualisation to implementation, with supportive organisations and processes visually displayed.
4. **Resource Allocation for Data and Digital Aspects:** There is a consensus among stakeholders regarding the need for increased resources dedicated to addressing data and digital aspects of research and innovation. Particularly, there is a recognition of individuals with dedicated expertise in healthcare innovation within NHS England, where supporting and delivering innovation objectives are fundamental to their role.
5. **Cultural Shift towards Learning from Failure:** Stakeholders advocate for a cultural shift that reframes unsuccessful innovations as learning opportunities or re-focusing points rather than failures. By fostering a positive narrative around setbacks e.g. fail fast and pivot stakeholders believe that it will encourage continuous learning and engagement from diverse perspectives.
6. **Enhanced Decision-Making Mechanisms:** Stakeholders stress the importance of establishing a deliberate decision-making framework within the healthcare system to advance innovation initiatives. This includes identifying individuals mandated to represent organisational interests and ensuring avenues for discussions at senior levels.
7. **Promotion of Collaboration with Academia:** There is a consensus on the necessity of strengthening collaboration with academia to foster innovation. Stakeholders suggest involving external stakeholders in research networks to facilitate collaboration and mutual understanding.
8. **Cultural Change and Long-term Funding Strategy:** Stakeholders underscore the need for a cultural shift towards appreciating the role of communication and collaboration in innovation. Additionally, there are calls for a long-term funding strategy to incentivise collaboration and provide stability for innovation initiatives.
9. **Focus on Meaningful Outputs and Benefits:** Stakeholders emphasise the importance of focusing on meaningful outcomes and outputs rather than solely on activities. This entails sharpening the focus on achieving tangible benefits and ensuring that innovations yield meaningful results.
10. **Importance of Change Management and Coordination:** Stakeholders highlight the complexity of change within the healthcare system and stress the importance of effective change management and coordination. Boots-on-the-ground personnel are deemed essential for connecting various stakeholders and ensuring successful implementation of innovations.

**94% of internal stakeholders indicated they would be in favour of a united brand representing, communicating, and receiving research and innovation opportunities.**

## External Stakeholders

Drawing from insights provided by external stakeholders, several pivotal themes emerge, shedding light on recommendations for fostering enhanced collaboration and cultivating a robust innovation ecosystem in Northern Ireland:

1. **Amalgamation of Groups:** There is a suggestion for the consolidation or refocus of certain groups within the ecosystem to streamline operations and avoid inefficiency.
2. **Tangible Outcomes and KPIs:** Stakeholders emphasise the importance of establishing tangible outcomes and Key Performance Indicators (KPIs) for each group or job role to measure progress effectively.
3. **Alignment with Services and Solutions:** There is a call for individuals aligned with the services provided by various groups to identify solutions that address the needs of the healthcare service effectively.
4. **Guidance for Entrepreneurs:** Stakeholders highlight the need for guidance and direction for entrepreneurs to navigate the healthcare innovation landscape effectively.
5. **AHSN-Style Model:** Stakeholders express support for adopting a unified Academic Health Science Network (AHSN)-style model in Northern Ireland to enhance collaboration and effectiveness.
6. **Wide Consultation and Engagement:** Emphasis is placed on consulting a wide range of stakeholders and engaging individuals at various levels within the system to ensure inclusivity and commitment to proposed changes.
7. **Alignment and Unity:** Stakeholders recognise the importance of alignment and unity among stakeholders to achieve better outcomes for patients, carers, and service users.
8. **Political and Governmental Engagement:** Acknowledgment is made of the political and policy elements involved in implementing changes, underscoring the need to engage decision-makers from various government departments.
9. **Involvement of Service Providers and Users:** Importance is placed on including service providers and users in the decision-making process to ensure relevance and effectiveness of proposed changes.
10. **Promotion of Existing Facilities:** There is a suggestion to promote and utilise existing facilities and resources effectively to support innovation initiatives and research within the region.
11. **Department-Level Sign-Off and Consultation:** Stakeholders highlight the importance of department-level sign-off and consultation with academia for policy alignment and collaboration around the innovation agenda.
12. **Acknowledgment of Internal Competition:** Acknowledging internal competition within the healthcare system's scale, stakeholders emphasise the importance of recognising and exploring ways to leverage this competition collectively and not let it stand in the way of improving health outcomes.
13. **Funding and Support:** Stakeholders emphasise the need for funding and support for clinicians in both secondary and primary care, streamlined funding mechanisms, and clearer pathways for accessing financial support for innovation projects, as well as the establishment of a model, network, or institute of innovation tailored to the Northern Ireland landscape.

**87% of external stakeholders indicated they would be in favour of a united brand** representing, communicating, and receiving research and innovation opportunities. They clarify that rather than creating new networks, reviewing and leveraging existing ones, such as HIRANI, could serve as an effective conduit to businesses and academia. This approach could be combined with an exercise to review overlapping administrative functions and ensuring that roles are refocused to ensure that they are focused on improving health outcomes by implementing innovation.

## Recommendations

### Initial Design Recommendations based on Discovery

- 1. Map functions and overlaps of current R&I and healthcare organisations:** Conduct a comprehensive assessment to identify the functions and potential overlaps among existing R&I and healthcare industry bodies in Northern Ireland. By more detailed understanding services provided within the current landscape, we can effectively allocate resources, eliminate duplication, and optimise efficiency across organisations.
- 2. Assess data sources for determining priorities:** Evaluate various data sources to identify key priorities and areas of focus within the healthcare and R&I sectors. By leveraging data-driven insights, we can make informed decisions and allocate resources effectively to address pressing healthcare challenges and drive impactful innovation.
- 3. Set up innovation pathway and map resource for each stage:** Develop a structured innovation pathway that outlines the stages from ideation to implementation. Map the resources required at each stage, including funding, expertise, and infrastructure, to support seamless progression and efficient utilisation of available resources. It is likely the two separate innovation pathways would be most meaningful; one for internal and one for external innovation.
- 4. Establish a suitable governance structure to support delivery of innovation priorities and programmes:** Create a centralised structure comprising representatives from all relevant organisations involved in delivering services within the healthcare and research and innovation (R&I) sectors. This group will facilitate collaboration, streamline decision-making processes, and ensure alignment with overarching strategic goals. Additionally, where necessary, formalise Memorandums of Understanding (MoUs) to solidify commitments and responsibilities among stakeholders.
- 5. Determine innovation priorities and workstreams, in consultation with key stakeholders:** Define innovation priorities and develop programs of work to achieve short, medium, and long-term success across Northern Ireland, while engaging with key stakeholders throughout the process. Consider how these will be delivered, ensuring accountability and capacity is reviewed continually, as well as measures of success. Consultation with stakeholders, including healthcare professionals, researchers, industry partners, and government agencies, will ensure that initiatives are aligned with stakeholder needs and priorities. Continuous review of accountability, capacity, and measures of success will be integral to the ongoing delivery of these priorities.
- 6. Establish process for managing industry access:** Develop a transparent and efficient process for managing industry access to the NI healthcare system, ensuring fair and equitable opportunities for collaboration and partnership. This process should streamline interactions between industry stakeholders and healthcare organisations while adhering to regulatory requirements and ethical standards.
- 7. Outline critical path to launch and timescales:** Develop a detailed pathway outlining key milestones, timelines, and dependencies for the implementation of initiatives within the healthcare and R&I ecosystem. This will enable effective project management, risk mitigation, and resource allocation to ensure timely delivery and successful outcomes.
- 8. Support launch planning and build ongoing internal comms plan:** Provide support for launch planning activities, including event coordination, stakeholder engagement, and communications strategy development. Establish an ongoing communications plan to keep stakeholders informed, engaged, and aligned with project objectives throughout the implementation phase.
- 9. Establish and launch intrapreneur programme and NI Accelerator Programme:** Foster a culture of innovation by establishing an intrapreneur programme to encourage creativity and entrepreneurship among healthcare professionals and researchers. This programme must include health and care organisations supporting intrapreneurs. Additionally, launch a Northern Ireland (NI) Accelerator Programme to support startups and SMEs in developing and scaling innovative healthcare solutions.

- 10. Consider external communications and engagement strategy:** Develop an external communications and engagement strategy to promote awareness of new infrastructure, initiatives, and opportunities within the healthcare and R&I ecosystem. Foster international collaborations and partnerships to enhance knowledge exchange and leverage global best practices in healthcare innovation.

## Conclusion

In navigating the complex landscape of healthcare innovation in Northern Ireland, it becomes evident that progress hinges upon strategic collaboration, robust governance, and a shared commitment to transformative change. The insights gleaned from internal and external stakeholders provide valuable guidance for charting a course towards success.

Internally, stakeholders underscore the importance of adopting an Academic Health Science Network (AHSN)-style model, fostering a culture of innovation, and enhancing collaboration with academia and industry partners. The need for a clear innovation framework, dedicated resources for data and digital aspects, and effective decision-making mechanisms emerges as critical priorities. Moreover, stakeholders advocate for a cultural shift towards embracing failure as a learning opportunity and emphasise the importance of long-term funding strategies to sustain innovation initiatives.

Externally, stakeholders echo similar sentiments, emphasising the importance of alignment, collaboration, and strategic engagement across sectors. Recommendations for leveraging existing networks, promoting collaboration with academia, and aligning vision and strategy underscore the need for a unified approach to innovation. The call for enhanced political and governmental engagement, utilisation of City Deals, and establishment of cross-departmental linkages highlights the interconnected nature of healthcare innovation and the imperative for collective action.

Moving forward, the design recommendations based on this discovery phase provide a potential roadmap for action, encompassing the establishment of governance structures, innovation pathways, and communication strategies. By mapping functions, streamlining workflows, establishing new innovation implementation processes and fostering collaboration, Northern Ireland can unlock its full potential as a hub for healthcare innovation. The potential launch of intrapreneur and accelerator programmes, alongside transparent processes for industry access, will cultivate a fertile ground for innovation to thrive.

To measure the success of future initiatives, several key indicators may be considered. These include ensuring that innovation meets priority needs and over time improves health outcomes, tracking the number of active innovation projects per year, and cultivating a growing network of identified champions of innovation, innovation implementation leads, and intrapreneurs across the healthcare system. As those outcomes may take time to materialise, some initial outputs can be measured, such as the development of programmes, educational and knowledge-sharing sessions, the number of individuals trained to be champions or intrapreneurs, and the establishment of an Innovation Toolkit can provide tangible markers of progress.



**Healthcare  
Innovation  
Consortium**

*Because innovation is everyone's business, we've made it ours*



# Healthcare Innovation Consortium – Northern Ireland Research and Innovation Network – Innovation Models

April 2024





**Healthcare  
Innovation  
Consortium**

*Because innovation is everyone's business, we've made it ours*

# **Building a Health Innovation Network (HIN) Blueprint for DHCNI**

*Achieving Success from what works well*

# The Health Innovation Network is a collective group of 15 networks across England that help drive the adoption of innovation



## What is a Health Innovation Network?

- Established in 2013, the Health Innovation Network (HIN), previously known as The AHSN Network, consists of **15** local groups leading the charge in health and care innovation<sup>1</sup>.
- As **connectors** of the NHS, academia, local authorities, the third sector, and industry, HINs are uniquely positioned to rapidly and broadly scale innovation.
- HINs **collaborate** with HIN members, national commissioners (NHS England & Improvement, Office for Life Sciences), and industry partners, ensuring that patients regularly benefit from innovative solutions

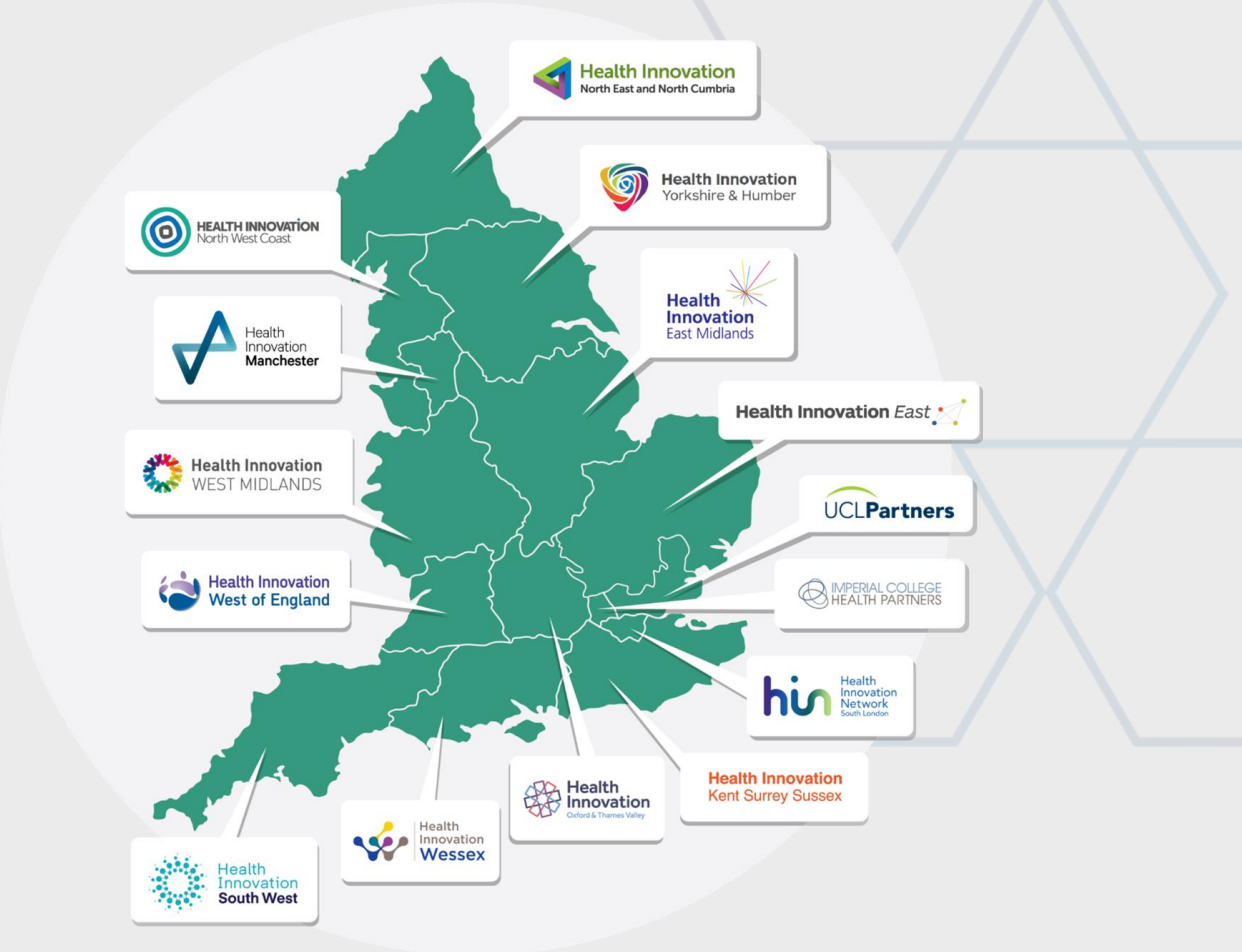


Figure 1: Map showing the 15 Health Innovation Network locations<sup>1</sup>

References: 1. NHS England. The Health Innovation Network. Available at: <https://www.england.nhs.uk/ourwork/part-rel/healthinnovationnetwork/>

# Originally implemented in 2013/14, AHSNs were relaunched in 2023 under the new badge of Health Innovation Networks

## Proposal

AHSNs were first proposed by name in the 2011 report "Innovation Health and Wealth"<sup>1</sup> by Sir David Nicholson, chief executive of NHS England, and launched by the Prime Minister, David Cameron.

2011

## Announcement

On 23 May 2013, the 15 designated AHSNs were announced<sup>2</sup>. They are regional, with non-overlapping territories covering the whole of England.

2013

## Implementation

By January 2014, all 15 contracts had been returned and signed. England becomes the first country to fully implement a system of AHSNs universally

2014

## Licence Extension

In 2019, the AHSNs received a new five-year licence, running to 2023, funded by NHS England, NHS Improvement and the Office of Life Sciences

2019

## Relaunch

The Government and NHS England relicensed England's 15 AHSNs under the revised badge of 'Health Innovation Networks' (HINs) for 5 years until 2028.<sup>3</sup>

2023 → 2028

# HINs connect NHS leaders and industry partners to drive cost effective growth through innovative solutions

## Navigating Healthcare Challenges

- The NHS faces unique obstacles to patient care<sup>1</sup>
- Ongoing **workforce pressures** and unprecedented **demand** for services in primary through to tertiary care settings have led to significant challenges
- Addressing these challenges requires **innovative thinking** and stronger collaboration across health systems

## The Power of Innovation

- No single solution exists, but innovation is crucial for **revolutionising healthcare**, improving **resource efficiency**, and addressing community needs
- Innovations span from straightforward apps and diagnostics to complex medication regimens, digital infrastructures, and care pathway redesigns.

## The Health Innovation Network

- Fosters **collaboration** between **NHS organisations** and **industry partners** to accelerate the uptake of innovative and evidence-based therapies, technologies and care pathways.
- **Cross-stakeholder** collaboration can bring an injection of pace, fresh thinking, additional insight and experience of rapidly delivering at scale.

The HIN operates with three strategic aims:

1

Develop outcomes-led programmes that respond to health and care priorities

2

Build a high-impact national innovation pipeline

3

Establish HINs as an authoritative voice on transforming health through innovation

HINs achieve this by seeking innovations that :

Enhance patient care, safety, and clinical outcomes

Generate cost savings for the NHS and social care

Align with the NHS's priorities<sup>1</sup>

# HINs have a dual focus, guiding both commercial innovators and NHS healthcare teams through various supportive methods

## How do HINs guide commercial innovators?

## How do HINs guide health and care teams?



Advice

### Innovation Surgeries

Offering one-on-one advice, either in-person or via phone, to help innovators identify healthcare challenges and understand evidence requirements.

### Innovative products

Signposting to innovations that may meet the needs of their local populations. Advise on design and implementation of digital pathways.



Support

### Solution Evaluation

Assessing if your innovation addresses the needs of HIN members and promoting it within the network.

### Practical Support

Evaluations, evidence gathering and data analysis to build knowledge and support clinical practice. Training in key areas (Digital, Data, Technology). Frameworks for adoption.



Programmes

### Funding and Support Navigation

Directing innovators to additional resources like the National Innovation Accelerator.

### Innovation Programmes

Facilitate adoption of proven innovation products through AAC. Annual Innovation Grants kickstart projects. Sharing of wider innovation funding opportunities.



Connections

### Business Support and Networking

Providing access to programs like the Digital.London Health Accelerator, expert workshops, and funding opportunities such as SRBI and Innovate UK competitions.

### Connecting people with great ideas

Communities of Practice (CoP). Innovation challenge events. Patient partnerships. Events and networking opportunities.

# What is needed to speed up service adoption of innovations in the NHS?

## Factors for Rapid Adoption of Innovation in the NHS

### The Kings Fund >

*An independent report was commissioned by the six AHSNs responsible for spreading health innovation in the East Midlands; Kent, Surrey and Sussex; the North West Coast; South London; the West of England; Yorkshire and Humber.*



Interviews were set up with the originations and AHSN staff for 8 successful innovation implementation projects.

- 1. Early diagnosis and intervention:** Many innovations succeed by providing earlier diagnosis and intervention than previous approaches
- 2. Changes to staff roles:** Adapt the roles of GPs, community services, and hospital consultants within local systems
- 3. Empowering patients:** Encourage patients to play a more active role in managing their own care
- 4. Improving access for vulnerable patient groups:** Innovations that focus on enhancing access to services for vulnerable and neglected patient groups, such as individuals with severe mental illness or older people, can result in significant improvements in overall care quality.
- 5. Addressing social challenges:** Recognise the importance of addressing social challenges alongside physical and mental health needs
- 6. Breaking down silos:** Overcome organisational barriers and promote collaboration between healthcare providers, academic organisations, local authorities, and other stakeholders
- 7. Securing appropriate funding quickly:** Ensure innovators have access to funding, not only for the development of their ideas, but also for the adoption and spread of their innovations.
- 8. Support from local leaders:** When local leaders actively champion innovation by setting ambitious goals, encouraging staff to explore new ideas, and providing resources to execute plans, it creates a culture that embraces change and supports rapid adoption.
- 9. Integrated local health and care systems:** Develop more integrated systems can help address barriers to adoption by establishing appropriate objectives, financing mechanisms, performance management, and stronger relationships between professional groups and services.

# What have AHSNs not done so well in the past?

In a survey of Health Tech founders<sup>1</sup>, where 15+ provided validated input:

**Do AHSNs offer useful introductions, advice and access to funding?**

The **effectiveness of AHSNs** in providing useful introductions, advice, and access to funding is **inconsistent**. Success often depends on **fortunate circumstances**. While the NIA offers support for a small group, much of its program relies on devolved support via AHSNs, which continues to pose challenges.

**Do AHSNs give valuable insight and share understanding of the system they're situated in?**

AHSNs do not consistently provide **valuable insights** and **shared understanding** of the systems they are situated in. Their effectiveness in this area appears to vary significantly.

**Do AHSNs help healthtech to proceed through the lifecycle of concept validation >> to active intra-NHS evidencing >> to getting paid contracts >> to wider scale?**

While AHSNs may help some healthtech companies through various stages of the lifecycle, the vast majority **do not feel that they are experiencing a supportive pipeline within the NHS**. The '**proven innovation pipeline**' referenced by the AHSN Network does not seem to be effectively implemented, as many UK healthtech companies struggle to progress. Additionally, some interviewees reported that **AHSNs can create more bureaucracy and additional steps** in the process without clear benefits or guidance.

**Do AHSNs capably generate the right kinds of evidence that the system needs to actually commission it?**

AHSNs might be effective in generating the right kinds of evidence for commissioning in some cases, particularly when it comes to **health economic evaluation**. However, **only a small number of AHSNs were consistently praised** for their performance in this area, leaving **room for improvement among the majority**.

# There are 5 pillars for Health Innovation Network success

*When building a new HIN, we must ensure the blueprint captures what 'success looks like'*



## Key Theme

Innovation must meet a necessary requirement

Key stakeholders must be aware

Key stakeholders must be invested

There must be skilled staff to oversee implementation

Encourage adoption of the innovation



# The Base Case Blueprint for Building a HIN

Theme	Base Case
<b>Collating the Evidence Base</b>	<ul style="list-style-type: none"> <li>• Review the evidence base, strategic and policy needs, and local, regional, or national data to outline the case for change.</li> <li>• Address health inequalities and ensure protected groups are not unintentionally disadvantaged.</li> </ul>
<b>Establishing a Governance Structure</b>	<ul style="list-style-type: none"> <li>• Include a steering group and appoint clinical leads to provide direction and oversight.</li> <li>• Undertake stakeholder mapping and define leadership roles to build a robust support system.</li> </ul>
<b>Identifying and Collaborating with Partners</b>	<ul style="list-style-type: none"> <li>• Work with industry, the third sector, and service users to integrate diverse perspectives and expertise.</li> <li>• Build goodwill with key stakeholders to create momentum and ensure a positive programme start.</li> </ul>
<b>Building in Service User Input</b>	<ul style="list-style-type: none"> <li>• Ensure the patient's voice is central to the programme, reflecting their needs and experiences.</li> <li>• Capture and integrate patient feedback to inform continuous improvement.</li> </ul>
<b>Developing Adoption and Spread Guidance</b>	<ul style="list-style-type: none"> <li>• Create an implementation toolkit, engagement toolkit, and communications plan to support adoption.</li> <li>• Utilise specific tools to communicate programme details and the approach to implementation</li> </ul>
<b>Promoting Programme Success</b>	<ul style="list-style-type: none"> <li>• Use established communication channels to regularly update stakeholders on programme progress.</li> <li>• Raise awareness of the programme's positive impacts to encourage wider adoption.</li> </ul>
<b>Establishing Communities of Practice</b>	<ul style="list-style-type: none"> <li>• Promote shared learning and support through regular interaction among practitioners.</li> <li>• Set up a dedicated workspace for programme leads to access toolkits and exchange knowledge.</li> </ul>
<b>Supporting Implementation</b>	<ul style="list-style-type: none"> <li>• Upskill project/programme staff to aid operational/clinical staff with implementation.</li> <li>• Address the challenges of changing behaviour to ensure the sustainability of innovation.</li> <li>• Collect qualitative feedback from key stakeholders</li> </ul>

# Taking the learnings from previous examples, use these points to 'Level up'

Theme	How to Level Up?
<b>Collating the Evidence Base</b>	<ul style="list-style-type: none"> <li>Stay at the forefront of UK Health policy.</li> <li>Create new thinking and evidence that can be used to guide future policy through presentations whitepapers, case studies, blog articles</li> <li>Complete 'innovation scanning' to maintain a view of the competitive landscape.</li> <li>Seek innovations that facilitate earlier diagnosis and intervention than existing approaches.</li> </ul>
<b>Establishing a Governance Structure</b>	<ul style="list-style-type: none"> <li>Establish relationships with key clinical experts and thought leaders and promote the benefits of innovation through tailored guides and toolkits</li> <li>Strong clinical leadership will drive implementation and ongoing support for a programme.</li> </ul>
<b>Identifying and Collaborating with Partners</b>	<ul style="list-style-type: none"> <li>Secure funding quickly for adoption and spread of innovation.</li> <li>Comprehensive stakeholder mapping and prioritisation with 4 key themes; those stakeholders to consult, partner with, inform and involve.</li> <li>Collaborate with other HINs for a whole system approach.</li> <li>Develop integrated systems by establishing appropriate objectives, financing mechanisms, performance management, and stronger relationships between professional groups and services.</li> </ul>
<b>Building in Service User Input</b>	<ul style="list-style-type: none"> <li>Seek the involvement of people with lived experience in the community and voluntary sector</li> <li>Local leaders to champion innovation by setting ambitious goals, encouraging staff to explore new ideas, and providing resources to execute plans</li> <li>Validate strategies/initiatives with Key Opinion Leaders (KoLs)</li> </ul>
<b>Developing Adoption and Spread Guidance</b>	<ul style="list-style-type: none"> <li>Embrace Digital Transformation and Technology, this will allow seamless integration and faster adoption of new devices and tools.</li> <li>Invest in a programme team or committee that specialises in value communication.</li> <li>Work with marketing teams to make training webinars, demos, etc</li> <li>Identify collaborative online workspaces for shared materials</li> </ul>
<b>Promoting Programme Success</b>	<ul style="list-style-type: none"> <li>Essential to put 'boots on the ground'. Senior clinicians to convince on the benefits, project teams to implement innovations, support for providers</li> <li>Adopt QI principles, develop a tailored QI plan and Regularly convene key players to apply QI monitoring and promote shared learning</li> <li>Share and learn from previous and current evidence of 'what works well'</li> <li>Utilise national procurement frameworks to support rollout across local commissioning.</li> <li>Collaborative workshops with programme leads and coordinated promotion ensures an innovation's sustainability and continued rollout post-programme.</li> </ul>
<b>Establishing Communities of Practice</b>	<ul style="list-style-type: none"> <li>Create national and local CoPs to support post implementation sharing and learning across key stakeholders.</li> </ul>
<b>Supporting Implementation</b>	<ul style="list-style-type: none"> <li>Conduct qualitative analysis by sorting the data using a framework approach with categories, themes and sub-themes.</li> <li>Validate with thought leaders and disseminate findings.</li> </ul>

# Case Study: Community pathway to rapidly test and treat flu<sup>1</sup>

Collaboration between the Innovation Agency, Roche Products Limited and Roche Diagnostics Limited

## Current Status:

- Proof of value

## Innovation Type:

- Service

## Solution Theme:

- Diagnosis
- Treatment

## Geographic Scope:

- Health Innovation North-West Coast
- Health Innovation Yorkshire and Humber

## Focus of Programme

### Objective:

- Pilot a **community pathway** for testing and treating **Flu A/B and Covid-19** in patients **over 65** and at-risk groups based on flu vaccine eligibility using **point-of-care diagnostic tests** that give results in 20 minutes

### Aim

- Provide **diagnostic certainty** in **primary care settings** to potentially **reduce referrals** to **secondary care**

## AHSN (HIN) Involvement

- **Digital Reporting Pathway:** Commissioned NHS-owned company HealthCall to develop a digital reporting pathway to capture test results in electronic patient records
- **Independent Evaluation:** Commissioned to assess cost, health, and other potential benefits
- **Feedback and Data Analysis:** Project included qualitative interviews, questionnaires, and quantitative analysis to provide evidence for optimisation and scalability
- **Project Replicability:** Ensured interchangeable providers/partners for testing equipment, digital architecture, and data analysis for future replication in other locations

## Key Outcomes

### Outcomes

- Successfully established, implemented, and replicated community flu test and treat pathway in several locations

### Key Findings

- Improved patient care through early diagnosis, preventing deterioration in primary care, and reducing burden on secondary care
- Positive patient feedback on the ease of understanding the pathway
- Adaptable for various community settings
- Diagnostic certainty for prescribers, supporting prescription decisions

# Case Study: Supporting the detection of Atrial Fibrillation and optimising treatment<sup>1</sup>

## AHSN National Programme (2018-2020)

### Current Status:

- Rollout

### Innovation Type:

- Device
- Digital
- Service

### Solution Theme:

- Diagnosis
- Treatment

### Geographic Scope:



National

### Focus of Programme

#### Detect

Raising public awareness of AF and the importance of pulse rhythm testing to identify those with undiagnosed AF

#### Protect

Supporting healthcare professionals to offer optimal anticoagulation medication to all those who would benefit

#### Perfect

Supporting patients with their anticoagulation medication and supporting clinicians to review patients with AF.

### AHSN (HIN) Involvement

- **Whole Systems Approach:** Collaboration among all 15 AHSNs
- **Patient Pathway Engagement:** Supporting the sharing of learning and best practices across the country
- **Quality Improvement Tools & Resources:** Provided for GP practices to identify at-risk patients and review existing AF patients
- **National Procurement Frameworks:** Featuring five nationally funded AF detection products for local commissioning
- **Online AF Toolkit:** Contains tools, resources, clinical guidance, and evaluation to help NHS teams improve detection and treatment

### Key Success Factors

- Strong **Clinical Leadership** drove the implementation and ongoing support for the program
- Robust **collaboration and engagement** between clinical staff, deployment locations, and stakeholders.
- Efficient local **information governance** streamlined processes and reduced administrative burdens.
- Detection devices were **seamlessly integrated** into existing AF care pathways.
- Stakeholders **embraced technology**, allowing for quick adoption and utilization of new devices and tools.

# Successful healthcare innovation hinges on a deep understanding of the clinical and operational need for change

## What Good Looks Like

Health Innovation East 

**Focus ADHD**

### Strategic Alignment

The national Focus ADHD programme<sup>1</sup> identified unwarranted national variation in ADHD diagnosis service delivery that could be standardised with a more objective assessment. This had clear alignment to several key policy papers\*

### Establish thought leadership

The programme:

- Presented to the ADHD All-Party Parliamentary Group in 2022.
- Influenced the creation of NICE Medtech Innovation Briefing 318 (MIB318, March 2023)<sup>2</sup>

### Review clinical evidence

The Focus ADHD programme<sup>1</sup> collated key evidence (systematic review, clinical trials, and implementation studies) in formats that met the needs of the different audiences

## How to Achieve Success?

Ensure to stay at the **forefront of healthcare policy** through regular training and knowledge sharing sessions. **Anchor** to wider NHS/DHSC agendas to maximise the potential for lasting positive impact

Create **new thinking** and evidence that can be used to **inform and guide future policy** through presentations whitepapers, case studies, blog articles

**Build a strong network** with a range of policy makers, clinicians, NHS leaders and patients. **Collate high quality evidence** that is **tailored** for all audiences.



**Ability to capitalise?**



**High**



**Moderate**



**High**

# Robust evaluation and analysis of the innovation in the indicated population will provide influential evidence for decision makers

## What Good Looks Like

Health Innovation East 

Focus ADHD

### Real world evaluation

Health Innovation East Midlands undertook a real-world evaluation over 12 months to assess the effects of the QbTest and provide evidence that it was beneficial to families, clinicians and provider organisations.

### Programme scope

HI East Midlands gained national approval based on a clearly defined programme scope, which incorporated age and diagnosis in the population, services involved, type of tool, innovative aspect and positioning in care pathway.

### Analysis

Lacking systematic data collection for referrals in England, the program harnessed local intelligence with a cost-benefit analysis of the innovation's real-world impact data to confirm positive cost savings for the NHS.

## How to Achieve Success?

Establish the value of the innovation in **real world practice** over a long time-frame. Consider a broad evidence base and **objective** rather than **subjective** assessment

Complete '**innovation scanning**' to maintain a view of the **competitive landscape**. Establish a **steering group** to ensure the scope is adhered to

**Quantify** (through quantitative cost-benefit analysis) the exact **level of need** for an innovation and the exact **level of benefit** the innovation will provide.



Ability to capitalise?



Moderate



High



Moderate

# 1 Establish digital communication strategies that draw from the expertise and influence of thought leaders and policy makers

## 2 What Good Looks Like

Health Innovation East 

### Focus ADHD

#### Stakeholder engagement

Health Innovation East Midlands produced an engagement guide and communication toolkit that mapped key stakeholders, promoted info on positive outcomes, sought opportunities for presentation and key conferences and awards ceremonies.



### London Asthma Decision Support Tool (LADS).

#### Digital Technology

In a digital-driven approach, ICHP produced several webinars, demos and online clinical expert deep dives to showcase the Asthma decision Support Tool receiving 'highly commended' in its category at the HSJ awards.

## How to Achieve Success?

**Stakeholder engagement** is critical to success. Establish relationships with key **clinical experts** and **thought leaders** and promote the benefits of innovation through **guides and toolkits**

**Embrace Digital Transformation and Technology.** Ensure communication approaches incorporate a digital aspect. **Online marketing** and training through webinars, demos , etc. is essential to spread the word amongst all audiences.



Ability to capitalise?



High



High

# 1 Collate a well-informed programme team that can disseminate information in CoPs with clear consistent value narrative

## 2 What Good Looks Like

### Health Innovation East Focus ADHD

#### Value Messaging

The Focus ADHD programme invested in a programme team that listened and responded to all key stakeholders through clear and consistent communication.

#### Online Collaboration

The programme capitalised upon the FutureNHS workspace to securely store and share resources, as well as to facilitate online discussions.



#### Communities of Practice (CoP)

South London have developed seven communities of practice so far, and still growing. They include; Medication safety, Acute deterioration, Maternity, Sepsis, Duty of Candour, Delirium

## How to Achieve Success?

Invest in a **programme team or committee** that specialises in **value communication** to a range of stakeholders (patients, clinical experts, policy makers). **Engage early and proactively**

Identify **collaborative online workspaces** that are available to the programme target audience. Use this as the **library for the evidence base** to ensure **easy access** to the latest documentation

Create **national and local CoPs** to produce a conversational relationship among peers across the Network. CoP meetings provide **dedicated time** to **disseminate programme information**.



Ability to capitalise?



High



High



High



# 1 Map key influential stakeholders and draw on their experience 2 to establish leadership and governance structures

## What Good Looks Like

### Health Innovation East Focus ADHD

#### Stakeholder Mapping

A critical step that can affect successful implementation. Focus ADHD undertook stakeholder analysis, mapping stakeholders by influence and creating a list of priority stakeholders. Time was invested in building strong relationships with the key stakeholders.



#### Leadership and Governance Structures

Health Innovation West of England has a team of clinical leads, senior leadership team and board level oversight. This is consistent across HINs. Digital innovation directors are a new addition to the leadership structure to optimise digital transformation and the delivery of tech enabled new models of care.

## How to Achieve Success?

Conduct comprehensive **stakeholder mapping and prioritisation**<sup>1</sup>. This should be structured by **interest** and **influence** with 4 key themes; those stakeholders to **consult**, **partner** with, **inform** and **involve**. Revisit stakeholder map and **iterate over time**

The board should consist of **executives** within NHS organisations under the HIN umbrella. Executive teams should be made up of **healthcare leaders** with extensive experience. Inclusion of **clinical leads ensure patient centricity**. Appoint a **dedicated SRO** and assemble a skilled programme team. Implement a **robust governance structure** with clear reporting and risk escalation processes.



Ability to capitalise?



High



Moderate

# 1 Draw from commercial and lived experience to establish strategic partnerships that support innovation delivery

## 2 What Good Looks Like



### Lived Experience

HIN South London established a Lived Experience Partner role. Taken part in over 350 co-production activities and engaged with over 70 national stakeholders.

### Commercial Partners

Local health innovation networks operate across sectors and a key role is to broker connections between health and care and commercial organisations.

### Value Proposition and Business Case Development

Identify necessary program and financial resources, assess potential risks and issues. Sets out the ambitions, scope, metrics, roles, responsibilities, and methodology of delivering a programme

## How to Achieve Success?

Seek and embrace formal involvement of broader partners including people with **lived experience** in the community and voluntary sector

Build trust with commercial parties and **develop collaborative agreements** (e.g. Project Initiation Document) for strategic programmes

Employ recognised methodologies, **leverage resources** (NICE), and use proven templates to **assist ICB/providers** in developing a compelling **value proposition, case for change, and business case.**



Ability to capitalise?



High



Moderate



High

# 1 Empower sustained organisational growth through quality improvement, collaborative learning and skilled workforce

## What Good Looks Like



### Quality Improvement

HIN South London developed a resource pack to provide to innovation collaborative stakeholders that listed several NHS QI initiatives<sup>1</sup>

### Collaboration

Short polls within the innovation sessions gauged staff perceptions of usefulness, enabling adaptive modifications to meet their needs, such as tailoring the format based on their feedback



### Workforce

Focus ADHD mobilised a regional workforce that understood and supported the objectives of the programme. a range of skills such as marketing, data analysis and patient engagement.

## How to Achieve Success?

Adopt **QI principles** to establish a clear direction and measure outcomes effectively. Develop a tailored QI plan that includes **digital tools** to **streamline processes** and overcome challenges

Regularly **convene key players** to **apply QI monitoring** and promote shared learning. Enhance team performance with **coaching** that encourages **reflection and continuous improvement**

**Essential to put 'boots on the ground'**. Develop experienced project teams in each HIN which can **support providers** to plan and implement the innovation. This is especially true where **provider workforces are stretched**.



Ability to capitalise?



High



High



Moderate

# Support post innovation implementation and sustainability through events and shared learning workshops

1  
2

## What Good Looks Like

### Previous Experience

A critical factor in the success of a HIN is to build upon accomplishments and learning from other HINs, attracting the interest of organisations who were previously neutral.



### Communities of Practice (CoP)

South London have developed seven communities of practice so far, and still growing. They include; Medication safety, Acute deterioration, Maternity, Sepsis, Duty of Candour, Delirium



### Sustainability planning

When HINs role in leading the Focus ADHD programme ended in March 2023, local implementation by NHS partners has continued

## How to Achieve Success?

HIC, which includes **a set of previous HIN leaders** can draw from previous learnings and gain **advice on strategic decision making**

Create **national and local CoPs** to support post implementation **sharing and learning** across key stakeholders. CoP meetings provide **dedicated time to disseminate programme information**

**Remember post programme events.** Collaborative workshops with program leads facilitate knowledge exchange and acknowledge a steering group's efforts, while **coordinated promotion** ensures an innovation's sustainability and **continued rollout post-programme.**



Ability to capitalise?



High



High



Moderate

# Capture feedback through evaluations with key stakeholders and analyse data to generate insights

## What Good Looks Like

### Health Innovation East Focus ADHD

#### Evaluation

The Health Innovation Network was keen to build on the success and evidence base of the real-world evaluation and commissioned a national evaluation. This approach has ensured that the large-scale adoption and spread was still achieving the expected patients and staff benefits

### Health Innovation East Focus ADHD

#### Analysis

The Health Innovation Network collected multiple choice survey data and feedback from 22 healthcare staff using interviews. Domains within the NASSS (non-adoption, abandonment, scale-up, spread, sustainability) framework (Greenhalgh et al., 2017) were used within the analysis to guide the development of themes

## How to Achieve Success?

Collect **qualitative data** about the implementation of innovation programmes. Provide organisations with final reports so they can give **informed feedback**. Present **collective data** for all organisations using the innovation. **Disseminate among KoLs**

Conduct **qualitative analysis** on the data by sorting the data using a **framework approach** with **categories, themes and sub-themes**. Utilise **existing literature** or **KoL input** to develop themes and categories that are relevant to the implementation of technological innovations in health care.



Ability to capitalise?



High



High